

Technical Report 675

# **Military and Private Sector Commodity Outlets: A Retail Price Comparison**

**Brent G. Kroetch, Nancy S. Barrett, and Deb Figart**  
The American University

**Manpower and Personnel Policy Research Group**  
**Manpower and Personnel Research Laboratory**



**U. S. Army**

**Research Institute for the Behavioral and Social Sciences**

**February 1985**

Approved for public release; distribution unlimited.



**86 9 24 006**

**AD-A172 061**

**DTIC FILE COPY**

# U. S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES

A Field Operating Agency under the Jurisdiction of the  
Deputy Chief of Staff for Personnel

EDGAR M. JOHNSON  
Technical Director

L. NEALE COSBY  
Colonel, IN  
Commander

---

Research accomplished under contract  
for the Department of the Army

American University

Technical review by

Hyder Lakhani  
David Horne

## NOTICES

DISTRIBUTION: Primary distribution of this report has been made by ARI. Please address correspondence concerning distribution of reports to: U.S. Army Research Institute for the Behavioral and Social Sciences, ATTN: PERI-TST, 5001 Eisenhower Avenue, Alexandria, Virginia 22333.

FINAL DISPOSITION: This report may be destroyed when it is no longer needed. Please do not return it to the U.S. Army Research Institute for the Behavioral and Social Sciences.

NOTE: The findings in this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER ARI Technical Report 675	2. GOVT ACCESSION NO. AD-A172061	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) MILITARY AND PRIVATE SECTOR COMMODITY OUTLETS: A RETAIL PRICE COMPARISON		5. TYPE OF REPORT & PERIOD COVERED Final June-December 1983
7. AUTHOR(s) Brent G. Kroetch Nancy S. Barrett Deb Figart		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS The American University 4400 Massachusetts Ave., N.W. Washington, DC 20016		8. CONTRACT OR GRANT NUMBER(s) MDA903-82-C-0383
11. CONTROLLING OFFICE NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 2Q263731A792
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) --		12. REPORT DATE February 1985
		13. NUMBER OF PAGES 110
		15. SECURITY CLASS. (of this report) Unclassified
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE --
16. DISTRIBUTION STATEMENT (of this Report)  Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)  --		
18. SUPPLEMENTARY NOTES  Contracting Officer's Representative: Curtis L. Gilroy.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number)  Post Exchange Commissaries Prices		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Substantial price savings exist for commissary users in each of the five locations sampled, ranging from 23% at Ft. Polk to 31% at Ft. Belvoir. In other words, a \$100 market basket at the Ft. Polk Commissary would cost \$129 at the Leesville, Louisiana Piggly Wiggly; the same basket at Ft. Belvoir would cost \$144 at the Springfield, Virginia Safeway. A family of four with a \$70 weekly food budget would save, on average, about \$1285 per year using the commissary system. These savings exist whether non-food items or only food items are included in the market basket and are not particularly sensitive		

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

20. (continued)

to the composition of the market basket. In contrast, the PX/retail outlet price comparisons are less conclusive. The savings at PXs are due largely to the absence of sales taxes, but the price indexes are sensitive to the composition of the market basket and the retail stores used as the comparative one-stop outlet.

This research has shown the importance of commissaries in increasing the "real" earnings of Army personnel. Recognizing that military pay is low, it is one factor which attempts to raise the earnings of military personnel closer to their civilian counterparts. As a nonpecuniary benefit, it must be taken into account when making a comparison of military and civilian earnings.

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist	Avail and/or Special
A-1	



UNCLASSIFIED

11 SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

Technical Report 675

# **Military and Private Sector Commodity Outlets: A Retail Price Comparison**

**Brent G. Kroetch, Nancy S. Barrett, and Deb Figart**  
The American University

**Manpower and Personnel Policy Research Group**  
Curtis L. Gilroy, Chief

**Manpower and Personnel Research Laboratory**  
Joyce L. Shields, Director

**U.S. ARMY RESEARCH INSTITUTE FOR THE BEHAVIORAL AND SOCIAL SCIENCES**  
5001 Eisenhower Avenue, Alexandria, Virginia 22333-5600

**Office, Deputy Chief of Staff for Personnel**  
Department of the Army

**February 1985**

---

**Army Project Number**  
**2Q263731A792**

**Manpower and Personnel**

Approved for public release; distribution unlimited.

ARI Research Reports and Technical Reports are intended for sponsors of R&D tasks and for other research and military agencies. Any findings ready for implementation at the time of publication are presented in the last part of the Brief. Upon completion of a major phase of the task, formal recommendations for official action normally are conveyed to appropriate military agencies by briefing or Disposition Form.

---

## FOREWORD

---

This report, "Military and Private Sector Commodity Outlets: A Retail Price Comparison," is the result of a special tasking by the Office of the Deputy Chief of Staff for Personnel in preparation for the Fifth Quadrennial Review of Military Compensation. It is one of the few attempts to compare prices paid by military personnel in Commissaries and Post Exchanges with those paid by civilians in public retail establishments.



EDGAR M. JOHNSON  
Technical Director

## ACKNOWLEDGMENTS

---

We are indebted to a number of individuals for their advice and suggestions during the course of this study. Specifically, LTC David D. Dee, Scott E. Simpson, and LTC Robert D. Mayberry and members of his staff all extended their courtesy and provided us with a great deal of information regarding the U.S. Army commissary system. In addition, COL William H. Miner gave generously of his time and provided us with much insight about the PX system. We also wish to acknowledge the courtesy extended to us by the commissary and PX officers and their assistants at each of the bases we visited. Their assistance was invaluable.

We would also like to thank Dr. Curtis L. Gilroy and MAJ Henry B. Leonard for their active support throughout this project. The study was much improved by their insightful comments and direction.

Finally, we would like to thank Emily Downs and Charlotte Fletcher for their help in putting together this manuscript.



## MILITARY AND PRIVATE SECTOR COMMODITY OUTLETS: A RETAIL PRICE COMPARISON

### EXECUTIVE SUMMARY

---

#### Requirement:

The U.S. Army Research Institute conducts research on manpower, personnel, and training issues of particular significance and interest to the U.S. Army. Recently, military compensation has become a very important recruitment and retention incentive as the Army faces increased competition from the private sector for a declining pool of qualified manpower. The authors have examined one nonpecuniary aspect of the compensation benefits package--commissaries and post exchange privileges--to determine the extent to which they benefit military personnel.

#### Procedure:

The authors construct various price indexes using alternative market baskets to determine the relative prices paid by Army personnel and those paid by their civilian counterparts. Price comparisons were made at five locations--Ft. Hood, Texas; Ft. Polk, Louisiana; Ft. Lewis, Washington; Ft. Devens, Massachusetts; and Ft. Belvoir, Virginia--in order to examine regional price differences.

#### Findings:

Substantial price savings exist for commissary users in each of the five locations sampled, ranging from 23% at Ft. Polk to 31% at Ft. Belvoir. In other words, a \$100 market basket at the Ft. Polk Commissary would cost \$129 at the Leesville, Louisiana Piggly Wiggly; the same basket at Ft. Belvoir would cost \$144 at the Springfield, Virginia Safeway. A family of four with a \$70 weekly food budget would save, on average, about \$1285 per year using the commissary system. These savings exist whether non-food items or only food items are included in the market basket and are not particularly sensitive to the composition of the market basket. In contrast, the results of the PX/retail outlet price comparisons are less conclusive. The savings at PXs are due largely to the absence of sales taxes, but the price indexes are sensitive to the composition of the market basket and the retail stores used as the comparative one-stop outlet.

#### Utilization of Findings:

This research has shown the importance of commissaries in increasing the "real" earnings of Army personnel. Recognizing that military pay is relatively low, it is one factor which attempts to raise the earnings of military personnel closer to their civilian counterparts. As a nonpecuniary benefit, it must be taken into account when making a comparison of military and civilian earnings.

# MILITARY AND PRIVATE SECTOR COMMODITY OUTLETS: A RETAIL PRICE COMPARISON

## CONTENTS

	<u>Page</u>
I. INTRODUCTION AND OVERVIEW	
Introduction . . . . .	1
Constructing Price Indexes . . . . .	2
Laspeyre and Paasche Indexes . . . . .	3
The Consumer Price Index . . . . .	4
Selecting the Weights . . . . .	4
Limitations . . . . .	5
The Pure Price Index . . . . .	6
Regional Differences and Other Variability . . . . .	7
II. SPECIFIC CONCEPTUAL ISSUES	
Overview . . . . .	9
Selecting the Market Baskets and Weights . . . . .	11
III. COMMISSARY AND GROCERY STORE COMPARISONS	
Background . . . . .	13
Comparisons . . . . .	14
IV. PX AND RETAIL STORE COMPARISONS	
Background . . . . .	28
Comparisons . . . . .	29
V. SUMMARY . . . . .	40
VI. NOTES . . . . .	42
APPENDIX A. COMMISSARY AND GROCERY STORE MARKET BASKETS AND PRICE COMPARISONS . . . . .	43
B. PX AND RETAIL OUTLET MARKET BASKETS AND PRICE COMPARISONS . . . . .	67
REFERENCES . . . . .	92

# CONTENTS (continued)

	Page
LIST OF TABLES	
Summary Table 1. Commissary Savings . . . . .	xiv
Summary Table 2. PX/Retail Store Comparison . . . . .	xvi
Table 1. Price Indexes (Unweighted) . . . . .	16
2. Commissary Savings (Based on City-Pair Price Indexes) . . . . .	19
3. National Price Indexes (Unweighted) Market Basket less Turkey, Ham and Roast . . . . .	20
4. Price Indexes Unweighted Market Basket . . . . .	23
5. Price Indexes with Prior Meat Prices Killeen, Texas . . . . .	24
6. Price Indexes CPI weights . . . . .	26
7. Price Indexes PX and Retail Outlets . . . . .	30
8. Price Indexes PX and Retail Outlets Comparables Less Canon Camera . . . . .	32
9. Price Indexes PX and Retail Outlets Full Set of Comparables . . . . .	34
10. Price Indexes PX and Retail Outlets Full Set of Comparables Plus TI Home Computer . . . . .	35
11. Regional Price Indexes PX and Retail Outlets City-Pair Comparisons, All Comparables . . . . .	37
12. Regional Price Indexes PX and Retail Outlets City-Pair Comparisons, All Comparable Less Sunbeam Mixmaster . . . . .	39
A1. Full Market Basket Comparison Killeen, Texas . . . . .	44
A2. Full Market Basket Comparison Leesville, Louisiana . . . . .	48
A3. Market Basket Comparison Lakewood, Washington . . . . .	52
A4. Market Basket Comparison Leominster, Massachusetts . . . . .	56

## CONTENTS (continued)

---

Page

### LIST OF TABLES

Table A5.	Full Market Basket Comparison Springfield, Virginia . . . . .	60
A6.	CPI Basket and Weights . . . . .	64
B1.	PX and Retail Store Outlet Market Basket . . . . .	68
B2.	Market Basket Comparison Killeen, Texas . . . . .	72
B3.	Market Basket Comparison Leesville, Louisiana . . . . .	76
B4.	Market Basket Comparison Lakewood, Washington . . . . .	80
B5.	Market Basket Comparison Leominster, Massachusetts . . . . .	84
B6.	Market Basket Comparison Springfield, Virginia . . . . .	88

## SUMMARY OF FINDINGS

---

In this paper, we present our findings concerning military and civilian price indexes, for both the commissary and PX systems. We have derived separate market baskets, and thus separate price indexes, for the commissary and retail grocery stores and for the PX and civilian retail outlets. The market baskets used in deriving the indexes are presented in the appendixes to this paper.

Our major findings are as follows:

- o substantial savings exist for commissary customers
- o these savings exist whether we include non-food items in the market basket (or only food items) and are not particularly sensitive to the composition of the market basket used to construct the index
- o a family of four with a \$70 weekly food budget would save about \$1285 per year using the commissary system
- o the savings at the PXs are due in part, but not entirely, to the absence of sales taxes in these stores
- o the PX indexes are quite sensitive to both the composition of the market basket and the retail store used as the comparison one-stop outlet.

With respect to the commissary/grocery store comparisons, we found that there is a substantial savings for commissary users in each of the five locations sampled. Moreover, these savings were found to exist whether the comparison employs explicit CPI weights or implicit weights, and whether or not non-food items are included in the market basket.

As an example of the savings involved, the city-pair price indexes and commissary savings are presented in Summary Table 1. As may be seen from this table, a \$100.00 market basket at the commissary at Ft. Hood, Texas, would cost \$132.70 at the nearby Safeway in Killeen, representing a 24.7% savings for the commissary users. The smallest saving, 22.6%, is found at the Ft. Polk commissary, while the largest savings, 30.6% is found at the Ft. Belvoir commissary.

Summary Table 1  
Commissary Savings

<u>Location</u>	<u>Price Index</u>	<u>% Saving at Commissary</u>
1. Killeen, Texas		
Ft. Hood Commissary	1.000	24.7
Safeway	1.327	
2. Leesville, Louisiana		
Ft. Polk Commissary	1.000	22.6
Piggly Wiggly	1.291	
3. Lakewood, Washington		
Ft. Lewis Commissary	1.000	25.6
Safeway	1.345	
4. Leominster, Massachusetts		
Ft. Devens Commissary	1.000	26.5
Victory Market	1.361	
5. Springfield, Virginia		
Ft. Belvoir Commissary	1.000	30.6
Safeway	1.440	

These figures suggest a substantial yearly saving for commissary users. The "average" index for off-base stores (with commissaries set at 1.000) is 1.353. Thus, suppose a family of four spends \$70 per week at the commissary on food and non-food items. To purchase the same market basket off-base would, on average, cost \$97.72. Thus, the commissary user will save, again on average, \$1285.44 over the course of a year. Because these savings represent payment in kind, eliminating the commissary system in the United States, as recently recommended by the Grace Commission, would represent a loss of real income for Army personnel. As shown in several recent studies, the ratio of military to civilian pay is a significant determination of the enlistment and reenlistment decisions of military personnel. Thus, any net decrease in compensation could presumably lead to a decrease in the propensity to enlist and reenlist unless base pay were raised to offset the loss.

The results of the PX/retail outlet comparisons are much less conclusive than the commissary/grocery store comparisons. It is noted in this report that the PX/retail outlet price indexes are extremely sensitive to the composition of the market basket and, we suspect, to the choice of retail outlets. An example of this is given in Summary Table 2, where it is shown that as we move from the smallest dollar value market basket to the largest market basket, the price indexes change substantially, increasing in Texas but decreasing at the other four locations sampled.

Because the PX does not collect sales taxes from its customers, an identically priced good at the PX and at an off-base retail outlet will, in fact, cost less at the PX than it will off-base. This difference must be accounted for when constructing price indexes for the PX and off-base outlets. As shown in Summary Table 2, the price index is highly sensitive to the inclusion of the

sales tax. For example, the price index for the small market basket increases from 1.001 at the K-Mart in Killeen, Texas, to 1.041 when sales taxes paid at the K-Mart are included in the total cost.

Another problem in making these comparisons is that K-Marts and equivalents tend to compete with the lower price products offered in the PX but not, in general, the higher quality items. On the other hand, a store which would compete with these items, say perhaps Sears, may well show a larger index if not competitive with the PX's lower priced items.

Moreover, the PX offers a wide variety of goods, encompassing ten separate departments. Consequently, finding one substitutable outlet is, at best, a difficult task. Therefore, we recommend that the PX/retail store outlet comparisons continue to employ the Nielsen approach, which does not use a market basket, but rather a line item comparison of PX goods with several other outlets carrying that item. This, we believe, provides more reliable comparisons (although not price indexes), than the single comparison method.



## SECTION I

### INTRODUCTION AND OVERVIEW

#### INTRODUCTION

Commissaries and Post Exchanges (PXs) are viewed as a benefit to military personnel since the prices charged are said to be lower than the prices charged in comparable civilian retail outlets. The purpose of this research is to construct a market basket and price indexes for commodities sold to Army commissaries and post exchanges for comparison with civilian outlets to determine the extent to which military consumers save. The major aspects of this project involve selecting a methodology, collecting the data, and developing the indexes.

Although the objective of a price index is quite straightforward, preparing an appropriate price index is not without controversy. This is because price indexes are most often used to measure the magnitude of inflation over time. An improperly specified price index will bias the estimate of the price changes and therefore inhibit the design of appropriate policy measures aimed at stabilizing prices. Similarly, a price index designed to show cross-sectional price differentials, as is done in this study, may also lead to unreliable results if not properly specified.

In this report, we will review some of the conceptual problems associated with constructing a proper price index, as well as discuss the methodology we have chosen for this study. In addition, we present the results of our cross-sectional study of pricing on- and off-base and discuss the within-group and between-group variations.

## CONSTRUCTING PRICE INDEXES

Most of the generally applied price indexes, such as the Consumer Price Index (CPI), are constructed by employing a "market basket" of goods and services. The dollar expenditures for the predetermined composite of goods and services purchased are assessed at a point in time, called the base year. The base period prices are then compared to the prices of selected goods and services in succeeding periods and the relative price changes determined. Specifically, each commodity in the market basket is assigned a "weight" which is used as a means of identifying the relative importance of that commodity in the consumer's expenditure pattern.

There are several different price indexes one may use. Among the more important indexes are:

- Consumer Price Index
- Pure Price Index
- Laspeyre's Index
- Paasche Index
- Fisher's Ideal Index
- Edgeworth Index
- Inkle Index
- Geary and Khamix Indexes
- Product Mix Changes, and
- Wholesale Price Index

Because of the widespread use, understanding, and acceptability of the CPI and the pure price index, we have chosen these for our study. However, because the Paasche and Laspeyre indexes are frequently used, and because the CPI is similar to the Laspeyre index, we first briefly discuss these index methods.

#### LASPEYRE AND PAASCHE INDEXES

The Laspeyre and Paasche indexes, though quite similar, differ in the use of weights. When using the Laspeyre index, a base year market basket is priced in each succeeding period. Because the market basket is not changed from the base year, Laspeyre's index is called a "fixed-weight, fixed base" index. This index is best suited for determining how much more (or less) a given market basket would cost a consumer today, versus in the base year. The Paasche index, on the other hand, uses a current period market basket. The current period expenditures are compared to a hypothetical base year expenditure. The advantage of the Paasche, then, is that it avoids the substitution bias.

The choice between the Paasche and Laspeyre's indexes depends upon two considerations: (1) the objective of the study, and (2) theoretical considerations. If one wishes to determine how much a certain market basket purchased in the base year would cost today, the Laspeyre index is preferred, as it is designed to provide this type of information. However, if the objective is to determine the magnitude of inflation, the Paasche index is generally preferred, since it allows the consumer to adjust his market basket as relative prices change over time.

## THE CONSUMER PRICE INDEX

The CPI, produced each month by the U.S. Bureau of Labor Statistics, is similar to the Laspeyre index. The CPI measures the cost, relative to the base period, of purchasing base-year quantities at the given-year prices. Hence the CPI measures changes over time of prices of a "market basket" of consumer goods and services purchased by urban wage earners and clerical workers for family or individual consumption. Thus, in the CPI the procedure is to measure price change by repricing at regular time intervals and comparing aggregate costs of the goods and services in the market basket. The quantities of these goods and services are kept constant except at times of weight revisions.

The strength of the CPI as a measure is its comprehensiveness. Surveys are taken each month and are broken down into specific categories (groups of commodities) and subcategories.<sup>1</sup> Therefore, the value weights assigned are not arbitrary; rather, they are based on actual observations of consumer behavior.

### Selecting the Weights

Value weights for the index represent average annual expenditures of consumers. They are derived from periodic, extensive consumer expenditure surveys (CES) completed every decade.<sup>2</sup> The latest CES was completed in 1980-81 which surveyed a sample of the urban population: all persons living in Standard Metropolitan Statistical Areas (SMSA's) and in urbanized areas and urban places of 2,500 or more persons outside of SMSA's. Armed Forces personnel living outside military installations are included; all other Armed Forces personnel are excluded.<sup>3</sup>

Relative importance ratios are also derived at a point in time. They show approximately how wage-earner and clerical-worker consumers actually spend their money at the time the value weights are established. These ratios cannot be used, however, as estimates of current spending patterns nor as indicators of changing consumer expenditure patterns over the intervals between weight revisions that arise because of either changes in income or changes in the types and qualities of goods and services.

The method for computing the CPI was changed in 1977. At that time, probability sampling techniques were introduced. The more important items are included with certainty, while the remaining items within a given expenditure group are selected on a probability basis.

The relative importance of a "certainty" item represents consumer spending for that item only. "Probability" items, on the other hand, represent all other items within the expenditure class. The total weight of all those items is then divided equally among the probability items within a given expenditure class.

#### Limitations

In practice, the usual method of computing the CPI, or any index of the cost of living, is the so-called "method of aggregates." Because some of the weights are based on probability, they are implicit as opposed to direct.<sup>4</sup> Therefore, although in the aggregate the weights are not arbitrary, individual relative importance cannot be specifically determined for probability items.

Note also that the CPI is subject to substitution bias. Because the CPI pertains to a fixed basket of goods and services, it does not allow for substitution in consumption. In other words, the relative importance

ratios show how consumers would distribute their expenditures if they continued to buy the same qualities and quantities of goods and services they bought in the period in which the index values were based. Because the CPI does not allow for substitution in consumption, it may well overestimate price changes.<sup>5</sup>

#### THE PURE PRICE INDEX

A pure price index attempts to measure changes in prices, over time, of a fixed group of goods and services, but in a slightly different way than, say, the Laspeyre. The pure price index is used to estimate the changes in prices that would have occurred in the absence of any changes in the characteristics of the goods sampled. Theoretically, this is a useful concept because consumer satisfaction is presumed to be held constant. However, the pure price index is extremely difficult to actually apply in a time series analysis because: (1) the concept of identical is inappropriate when pricing services (versus goods), and (2) the goods and services cannot be held constant for any extended period of time.<sup>6</sup>

From the discussion above, it may be seen that neither the CPI nor the pure price index is without conceptual difficulties. Thus, all else equal, the choice of an index depends upon the objectives of the study. In this study, our objective is to compare the costs of goods in commissaries and post exchanges versus the costs of these same goods off base.

These comparisons will be made in specific locations as well as across regions. In other words, our method of constructing the price indexes should account for the static cross-sectional nature of the study. The method best suited to this task is the pure price index.

The conceptual difficulties associated with using a pure price index in a time series analysis are benefits of using this method in a static cross-sectional price comparison, such as is done in our study. At a point in time, characteristics can certainly be assumed constant across geographic regions, thus avoiding the problem of product quality differentials. The quality characteristics are held constant simply by using the identical market basket of goods for each locale. Further, since services are not included in our study, the concept of a pure price index is uniquely suited to our task.

#### REGIONAL DIFFERENCES AND OTHER VARIABILITY

Most price indexes, such as the CPI and the pure price index, do not reflect differences across regions. In the U.S., there exist enormous geographical inflation rate differentials, as reported by Dawkins (1982). Dawkins identifies the basic determinants of the differentials using the Ordinary Least Squares regression technique. He finds that regional inflation rates are an increasing function of the percentage growth rates of per capita income, the union wage rate, and per capita property taxation. On base, the latter two are not relevant.

Michael (1979) and Hageman (1982) provide additional empirical evidence on the quantitative and qualitative variation in inflation rates across households. Michael analyzed the variation across households in price indexes over the period 1967 and 1974 using the 1960-61 CES. He showed that, in spite of

## SECTION II

### SPECIFIC CONCEPTUAL ISSUES

#### A. OVERVIEW

One of the more important conceptual issues identified in our discussions with commissary officers concerns the price of meat in Army commissaries versus retail outlets off base.

Commissaries sell their goods at cost, charging a small mark-up on the final purchase price for use in construction, renovation, equipment and supplies. While shelf items are easily priced for resale, meat items are priced at what has been termed a "zero trial balance."<sup>8</sup> The meat prices are determined by using a "cutting test" which approximates non-useable bone and fat content, leaving the required return from the consumable portion. After two weeks, prices may need to be adjusted so as to avoid a positive or negative return. If the commissary is running a profit on the meat sales, prices will be lowered to the extent necessary to eliminate the profit; if the commissary is experiencing a loss, prices will be adjusted upward. This procedure may introduce a bias into the price index, both across commissaries and between commissaries and retail civilian outlets, because the price data collected will be sensitive to these adjustments. Therefore, we have collected meat prices for the two previous adjustment periods at Fort Hood, Texas, so as to determine whether the "zero trial balance" procedure introduces any bias.



statistically significant differences between some subgroups of the population in measured price indexes in each of the periods under study, no subgroup persistently experienced higher or lower price changes than its counterpart. Moreover, the observed differences among groups or (socio-economic) types of households do not appear to be stable over time.

Hageman's work differs for three reasons: (1) He uses the 1972-73 CES; (2) He uses a rental "equivalence" approach to homeownership; and (3) He presents a detailed analysis of the difference in the price indexes of retired households (CPI-R) and households in which at least one family member has been employed for approximately 37 weeks in a wage or clerical worker occupation (CPI-W).

Hageman reports that in "one-year" regressions, no subgroup is found to have experienced, ceteris paribus, a significantly different rate of inflation than the average household. For example, families residing in the northeast, north central, and southern regions have experienced a higher rate of change over the period than the average household.

Additionally, some items contribute to raising the CPI-R relative to the CPI-W, such as food at home, fuel oil, natural gas, apparel, and hospital care and insurance. The expenditure items which tend to lower the CPI-R relative to the CPI-W are housing, telephone, services, food away from home, and gasoline.

Wilder, Williams, and Singh (1977) also find variability based on industry classification. They report that in general, concentrated industries pass along a smaller proportion of variable costs than do less concentrated industries.<sup>7</sup>

Prior to data collection, we expected a possible measurement bias to arise from the meat pricing policies of civilian retail outlets. Larger supermarkets, e.g., Safeway, and Giant, often use meats as a "loss leader." These stores operate as volume dealers and, to attract additional customers, they will often advertise sales on various meats, priced at a loss. Thus, the index would clearly be influenced by the price of meats on the date of data collection. To test the sample bias, we were prepared to record the "regular" or nonsale price of meats, should the civilian retail outlet be offering sales on the date we collect our pricing data. However, none of the retail outlets were advertising specials on meats during data collection. But several non-meat items were advertised as specials both at the commissaries and at the civilian retail outlets. We recorded, where possible, the nonsale prices for use in a sensitivity test on the indexes. As will be seen in the next section, these specials had a negligible effect on the price indexes.

We also identified a particular concern in our conversations with Army and Air Force Exchange Service (AAFES) personnel.<sup>9</sup> One of the difficulties with comparison between PXs and civilian retail outlets is that the PXs carry an extraordinarily wide variety of quality, ranging from generic brands to the highest quality. Unfortunately, this variation in brand name and quality is not uniform across products; that is, some items offered are only high quality, more expensive goods, while others are not. An example of this will be found in Section II where it is noted that some PXs carry only the glass bowl Sunbeam Mixmaster, at \$69.95, while off-base outlets such as K-Mart carry the steel bowl model, priced at about \$40. The consequence of

this variation is that quality cannot be controlled across PX and off-base outlets for all goods. Thus, if one compares the PX price to, say, K-Mart, many goods cannot be included in the market basket because of their vastly superior quality. An example of this would also include Nike shoes. These are carried at the PXs but only K-Mart brands are generally available at the K-Mart stores. Thus, one would have to compare the prices on Nike shoes with the prices at a store that does carry this particular brand.

Despite the above, we found K-Mart to be an appropriate one-stop outlet comparison, provided it is understood that this eliminates many of the high quality PX products from the market basket.

#### B. SELECTING THE MARKET BASKETS AND WEIGHTS

Although several previous price index studies are similar to the present study, the triennial cost comparison surveys conducted by the Army commissaries and the Nielson report, the distinguishing feature of our study is that we have selected one military site to serve as the base. All other commissaries, as well as all retail outlets, have been assigned an index against this base. The same procedure has been used for post exchanges and comparable retail outlets. Thus, separate market baskets have been designed for the commissaries and the post exchanges.

Previous surveys have not established explicit weights (which account for the importance of an item in the consumer's budget), but rather implicit weights (which do not). For instance, the Air Force employs a market basket comprised of 161 items, thus implicitly setting the weight

attached to each item. We suggest the use of both explicit and implicit weighting procedures, for the commissary, but not for the post exchanges, because of the comparability problem mentioned earlier.

The choice and definition of the procedure for price comparisons are much more important than the selection of weights. This holds true for time series analysis, but is especially true for cross-sectional research because any bias introduced by the weighting scheme is completely uniform.<sup>10</sup> For this reason, implicit weighting may be as appropriate in this type of study as explicit weighting. The advantage of employing both methods is completeness.

For the explicitly weighted market basket, we will use a subset of the commodities used in the CPI market basket. We believe the CPI market basket is best suited for this purpose because it is based upon extensive consumer expenditure surveys, as was discussed in the previous section. Subsets of the CPI basket are therefore used for the commissary items.

### SECTION III

#### COMMISSARY AND GROCERY STORE COMPARISONS

##### A. BACKGROUND

For geographical representation, the following sites were selected for data collection:

- Ft. Hood, Texas
- Ft. Polk, Louisiana
- Ft. Lewis, Washington
- Ft. Belvoir, Virginia

The retail grocery stores chosen for price comparisons were:

- Safeway (Killeen, Texas)
- Piggly Wiggly (Leesville, Louisiana)
- Safeway (Lakewood, Washington)
- Victory Market (Leominster, Massachusetts)
- Safeway (Springfield, Virginia)

These stores, we found, were close substitutes for the commissaries in the respective areas, at least in terms of brands and items offered.

Our original market basket was comprised of 115 items, but because of non-comparables either across cities or across city-pairs, the final market basket is comprised of 81 items.

Because the CPI basket includes only food items, we have devised a larger market basket encompassing many non-food items typically found at grocery stores. Examples of these items include laundry detergent, cleaning supplies, and diapers. This larger basket is used to test the sensitivity of the index with respect to these non-food items.

## B. COMPARISONS

The city-pair comparisons for each item in the market basket are shown in Tables A1 through A5 in Appendix A. As may be seen from these tables, the commissary prices vary from a low of \$107.62 for Ft. Devens to a high of \$114.70 at the commissary at Ft. Hood, Texas, a range of 6.5%. The off-base grocery stores vary from a low of \$143.18 in Leesville, Louisiana, to a high of \$163.95 in Springfield, Virginia, a 14.5% range.

The total market basket cost for each store in Tables A1 through A5 are unweighted prices, that is, given by implicit weights. The weights are implicit because when we include, say, a ten pound turkey in the market basket, we are implicitly assuming that a certain portion of the consumer's food budget is used for this purchase.

The advantage of using an implicit weighting system to derive our indexes is that we are able to include a large variety of food and non-food items, thus allowing for a more meaningful comparison. Using the market basket and prices shown in Tables A1 through A5, we construct price indexes for each city-pair and a "national" price index. The latter price index is derived by setting the commissary at Ft. Hood as the base, while the city-pair indexes are derived using the commissary as the base for the city.

City-pair and national indexes are presented for pre-tax and after-tax totals. For the pre-tax indexes, the total dollar value of the market basket is used, while the after-tax indexes include not only the

dollar value of the market basket, but any sales tax or surcharge imposed on that total.

In the commissary/grocery store comparison, the addition of sales taxes and surcharges makes very little difference because the sales taxes collected at the off-base grocery stores are not much different than the surcharge collected at the commissary. Each of the commissaries add a 5% surcharge to the total, while the sales taxes are added as follows:

- . Killeen, Texas: 4.0%
- . Leesville, Louisiana: 3.02%
- . Lakewood, Washington: 5.4%
- . Leominster, Massachusetts: 5.0%
- . Springfield, Virginia: 3.0%

From the above, it is clear that including sales taxes and surcharges will result in a slight increase for both the city-pair and national indexes for the Safeway in Lakewood, Washington; will result in no change for the Victory Market in Leominster; and will show a small decline in the other locations.

The effects of the sales taxes and surcharges are shown in Table 1. However, because the sales taxes and surcharges result in very small changes, they are not included in the sensitivity tests shown in Tables 2 through 5.

The city-pair and national indexes with and without sales taxes and surcharges, are shown in Table 1. Looking first at Killeen, Texas, when the commissary is used as the base for the index (1.000), we obtain a city-pair index (and national, since Ft. Hood commissary is used as the base for that index, as well) of 1.327 for the Killeen Safeway

Table 1

## Price Indexes (Unweighted)

Base: Commissary, Ft. Hood, Texas

Location	\$ Amount of Market Basket	Excluding Taxes and Surcharges		With Taxes and Surcharges	
		National Price Index	City-Pair Price Index	National Price Index	City-Pair Price Index
1. Killeen, Texas					
Commissary, Ft. Hood Safeway	114.70 152.23	1.000 1.327	1.000 1.327	1.000 1.315	1.000 1.315
2. Leesville, Louisiana					
Commissary, Ft. Polk Piggly Wiggly	110.88 143.18	0.967 1.248	1.000 1.291	0.967 1.225	1.000 1.267
3. Lakewood, Washington					
Commissary, Ft. Lewis Safeway	113.26 152.28	0.987 1.328	1.000 1.345	0.987 1.333	1.000 1.350
4. Leominster, Massachusetts					
Commissary, Ft. Devens Victory Market	107.62 146.52	0.938 1.277	1.000 1.361	0.938 1.227	1.000 1.361
5. Springfield, Virginia					
Commissary, Ft. Belvoir Safeway	113.83 163.95	0.992 1.429	1.000 1.440	0.992 1.402	1.000 1.413



(1.315 with taxes and surcharges added). The interpretation of this index is that a \$100 purchase at the commissary would cost \$132.70 at Safeway for that same purchase, a 32.7% increase over the cost at the commissary. It should be noted here that these indexes include all sales items, for both commissaries and off-base grocery stores.

As shown in Table 1, the cost of shopping at Piggly Wiggly is 29.1% higher than at the commissary in that location. It costs the consumer 34.5% more to purchase this market basket at Safeway in Lakewood, Washington, than at the commissary at Ft. Lewis, while the commissary at Ft. Devens is 22.6% less than the cost at its city-pair, Victory Market. Finally it costs 44% more to purchase this market basket at Safeway in Springfield, Virginia than it costs at the Ft. Belvoir commissary. Again, these indexes include all sales prices.

It should be noted that the indexes presented in Table 1 do not directly translate into percentage savings at the commissaries. For instance, the city-pair (non-tax) index for the Safeway in Killeen, Texas is 1.327, meaning (as previously stated) that a \$100 market basket at the Ft. Hood Commissary would cost \$132.70 at Safeway. However, if we wish to find the savings a consumer experiences at the commissary, we then take the inverse of the price index and subtract that from 1.0 and multiply by 100. Using the Ft. Hood commissary and the Safeway in Killeen as an example, we have:

$$\text{Percentage Savings} = \left[ 1 - \frac{1}{\text{Price Index}} \right] \times 100$$

The savings found by shopping at each of the commissaries are shown in Table 2, where the savings represent the amount saved compared to the commissary's off-base competitor.

In addition to the city-pair comparisons, it is also of interest to compare the costs across cities, for both commissaries and retail grocery stores. This is what we refer to as the national index and it is also shown in Table 1. Because the Ft. Hood commissary had the highest priced market basket among commissaries, and because the Ft. Hood commissary serves as an index base, the indexes for all other commissaries are less than 1.000. These indexes, however, are interpreted as before. If the goods cost \$100 at the Ft. Hood commissary, for instance, the same basket of goods will cost \$96.70 at Ft. Polk, \$98.70 at Ft. Lewis, \$93.80 at Ft. Devens, and \$99.20 at Ft. Belvoir.

The civilian grocery stores, on the other hand, all have indexes well in excess of 1.000. A \$100 basket of goods at the Ft. Hood commissary would cost \$24.80 more at the Louisiana outlet, \$32.80 more in Lakewood, Washington, \$27.70 more in Leominster, and an additional \$42.90 at the Safeway in Springfield, Virginia.

From Tables A1 through A5, it may be seen that a rather large part of the commissary savings shows up in meats, especially ham and turkey. Therefore, to test for the sensitivity of meats, we have priced the market basket exclusive of turkey, ham, and the chuck roast, which also generally is less expensive in commissaries than in the off-base stores. The indexes for the market basket exclusive of these items are shown in Table 2.

The city-pair indexes for the off-base Killeen, Texas, Leesville, Louisiana, and Lakewood, Washington grocery stores increased slightly

Table 2  
Commissary Savings  
(Based on City-Pair Price Indexes)

<u>Location:</u>	<u>% Savings</u>
1. Killeen, Texas	
Commissary, Ft. Hood	24.7
2. Leesville, Louisiana	
Commissary, Ft. Polk	22.6
3. Lakewood, Washington	
Commissary, Ft. Lewis	25.6
4. Leominster, Massachusetts	
Commissary, Ft. Devens	26.5
5. Springfield, Virginia	
Commissary, Ft. Belvoir	30.6

Table 3

## National Price Indexes (Unweighted)

Market Basket less Turkey, Ham and Roast

Location	\$ Amount of Market Basket	Excluding Taxes and Surcharges		With Taxes and Surcharges	
		National Price Index	City-Pair Price Index	National Price Index	City-Pair Price Index
1. Killeen, Texas					
Commissary, Ft. Hood Safeway	90.83 121.18	1.000 1.334	1.000 1.334	1.000 1.321	1.000 1.321
2. Leesville, Louisiana					
Commissary, Ft. Polk Piggly Wiggly	89.91 117.96	0.999 1.300	1.000 1.312	0.999 1.274	1.000 1.287
3. Lakewood, Washington					
Commissary, Ft. Lewis Safeway	90.50 125.86	0.996 1.386	1.000 1.391	0.996 1.391	1.000 1.396
4. Leominster, Massachusetts					
Commissary, Ft. Devens Victory Market	88.80 116.80	0.978 1.286	1.000 1.315	0.978 1.286	1.000 1.315
5. Springfield, Virginia					
Commissary, Ft. Belvoir Safeway	88.61 121.83	0.976 1.341	1.000 1.375	0.976 1.316	1.000 1.349

in each city when these meats were deleted from the market basket. These increases reflect the fact that the difference between meat prices at the commissaries and off-base stores are smaller than the price differences for the remainder of the market basket and this brings the index up from 1.327 to 1.334 in Killeen, from 1.291 to 1.312 in Leesville, and from 1.345 to 1.391 in Lakewood.

The opposite case occurs in Leominster and Springfield. The difference between meat prices in the commissaries and off-base stores are larger in these locations than the price differences for the rest of the market basket. Thus, the price index decreases in Leominster from 1.361 to 1.315, while the index in Springfield falls from 1.440 to 1.375.

The national index shows much the same relationship as the city-pair indexes. Naturally, the Killeen index has increased (since its city-pair did and the Ft. Hood commissary is the base for both indexes) but so, too, did the indexes for the commissaries and off-base stores in all other cities except Springfield. Again, these increases occurred because the differences in meat prices are smaller than the remainder of the market basket between the Ft. Hood commissary and the off-base stores in Leesville, Lakewood, and Leominster. However, the index increases for the commissary stores at these locations because the meat prices are higher than in the other commissaries. Thus, dropping turkey, ham, and the chuck roast from the market basket brings the total market basket price to near parity for all commissaries.

The drop in the national index for the Safeway in Springfield, Virginia, and the increase in this index for the Ft. Belvoir commissary arise because the meat prices are percentage-wise higher in these locations

than at the Ft. Hood commissary. In other words, the remainder of the market basket is cheaper at the Ft. Belvoir commissary and the Springfield Safeway.

Recall that sales prices were used to compute the indexes shown in Table 1. In all but one case, we were able to ascertain the "regular" or "non-sale" price of these goods and then compute the indexes using the regular price. These indexes are shown in Table 4.

As expected, the substitution of regular price for sales price made very little difference in the indexes, either city-pair or national. All changes were by less than one percent, ranging from a -0.7 percent drop to a 0.9 percent increase in the city-pair indexes, and ranging from -0.3 percent to 0.6 percent changes in the national index.

As mentioned earlier, meat adjustment prices in the commissary that occur every two weeks could have an effect on the price indexes. We therefore tested this by collecting meat prices for the two price adjustments prior to the date of data collection at the commissary at Ft. Hood. Using these prior period meat prices, the city-pair index for the Killeen Safeway was computed to see if a significant change had occurred. As will be seen from Table 5, the change is very small, indicating little or no bias arising from this source.

The previous results were all derived without the use of any explicit weighting system. To determine whether these indexes are sensitive to the choice of weights, we employ the CPI weights to compute new indexes for both the city-pair and national indexes. Because the CPI food basket does not include non-food items, these are deleted from the market basket, leaving us with the market basket and weighting system shown in Table A6 in Appendix A.

Table 4

Price Indexes

Unweighted Market Basket

Without Sales Prices

	<u>National</u>			<u>Regional</u>	
	<u>\$</u>	<u>PI</u>		<u>PI</u>	
1. Commissary, Ft. Hood	114.96	1.000		1.000	-
Safeway, TX	152.82	1.329	+0.2%	1.329	+0.2%
2. Commissary, Ft. Polk	111.12	0.967	0.0%	1.000	-
Piggly Wiggly, LA	143.58	1.245	-0.3%	1.292	+0.1%
3. Commissary, Ft. Lewis	113.26	0.985	-0.2%	1.000	-
Safeway, Lakewood, WA	153.31	1.334	+0.6%	1.354	+0.9%
4. Commissary, Ft. Devens	107.74	0.937	-0.1%	1.000	
Victory Market, MA	146.52	1.275	-0.2%	1.360	-0.1%
5. Commissary, Ft. Belvoir	114.44	0.995	+0.3%	1.000	-
Safeway, VA	163.95	1.426	-0.3%	1.433	-0.7%

Table 5

## Price Indexes

## With Prior Meat Prices

Killeen, Texas

Location	Prices as of 7/7		Prices as of 6/21	
	\$ Amount of Market Basket	PI	\$ Amount of Mkt. Basket	% Amount of Mkt. Basket
Commissary, Ft. Hood	114.70	1.000	114.08	1.000
Safeway	152.23	1.327	-	1.374
				1.338



The CPI weights total 12.867, rather than 1.0 because this is the weight given the purchase of food in the consumer's total budget. Because we are looking only at food items, we normalize the weights by dividing by 12.867, thus bringing the weighted sum to 1.0. Using this weighting system, we derive the price indexes shown in Table 6.

Comparing Tables 1 and 6, it is readily seen that the price indexes for the off-base stores, both city-pair and national, change very little in most cases. The national indexes change only slightly, rising by 0.6, 0.1, and 0.8% for the Leesville Piggly Wiggly, the Lakewood Safeway and the Leominster Victory Market, respectively. These figures indicate that compared to these three stores, the Ft. Hood commissary's discount on groceries approximates the discount on non-food items.

This does not hold for the Springfield Safeway, nor for the Killeen Safeway. The index for the Killeen Safeway drops markedly, indicating the Ft. Hood commissary discount on non-food items is greater than for food items, when compared to the Safeway off-base in that area. On the other hand, the opposite occurs when the Ft. Hood commissary is compared to the Springfield Safeway, as verified by the very large increase in the Springfield Safeway's national price index.

No particular pattern emerges from comparing the city-pair indexes in Tables 1 and 6. While the city-pair indexes drop considerably in Killeen and Leominster, they drop by only 3.3% in Leesville, and by a negligible 0.9% in Lakewood. Conversely, the Springfield index increases by 7.5%. Again, this indicates that the commissary discounts over their local competitors are much higher for non-food items than for food items in Killeen and Leominster, and are somewhat higher in Leesville. Discounts

Table 6

## Price Indexes

## CPI Weights

<u>Location</u>	<u>(Weighted) \$ Amount of Market Basket</u>	<u>Excluding Taxes and Surcharges</u>		<u>With Taxes and Surcharges</u>	
		<u>National Price Index</u>	<u>City-Pair Price Index</u>	<u>National Price Index</u>	<u>City-Pair Price Index</u>
1. Killen, Texas					
Commissary, Ft. Hood Safeway	22.13 28.06	1.000 1.268	1.000 1.268	1.000 1.244	1.000 1.244
2. Leesville, Louisiana					
Commissary, Ft. Polk Piggly Wiggly	22.07 27.75	0.997 1.254	1.000 1.258	0.997 1.230	1.000 1.233
3. Lakewood, Washington					
Commissary, Ft. Lewis Safeway	22.00 29.40	0.994 1.329	1.000 1.336	0.994 1.334	1.000 1.341
4. Leominster, Massachusetts					
Commissary, Ft. Devens Victory Market	22.07 28.43	0.997 1.285	1.000 1.288	0.997 1.285	1.000 1.288
5. Springfield, Virginia					
Commissary, Ft. Belvoir Safeway	23.10 34.99	1.044 1.581	1.000 1.515	1.044 1.551	1.000 1.486

are approximately equal in Lakewood, whereas the non-food discount is smaller than the discount on food items at the Ft. Belvoir commissary as compared to the Springfield Safeway.

As may be seen in Tables 1 through 6, the commissaries offer extremely large savings over their local competitors. This holds true whether or not non-food items are included in the market basket. It is our opinion, however, that non-food items should be included in the market basket, as this gives a better indication of the shopper's total savings when using the commissary.

Discounts are approximately equal in Lakewood, whereas the non-food discount is smaller than the discount on food items at the Ft. Belvoir commissary as compared to the Springfield Safeway.

As may be seen in Tables 1 through 6, the commissaries offer extremely large savings over their local competitors. This holds true whether or not non-food items are included in the market basket. It is our opinion, however, that non-food items should be included in the market basket, as this gives a better indication of the shopper's total savings when using the commissary.

## SECTION IV

### PX AND RETAIL STORE COMPARISONS

#### A. BACKGROUND

The PX comparison with civilian outlets is much more difficult than the commissary/grocery store comparisons because of the comparability problems mentioned earlier. Therefore, we made our market basket rather large, as shown in Table B1 in Appendix B. As anticipated, this market basket becomes substantially smaller when noncomparables are excluded in the national index. The items that are not included in this section are denoted by '\*' in Table B1. Those items which can be used only in city-pair comparisons are denoted with '\*+' in Table B1.

The comparative city-pair price lists for this study were conducted for:

- . Ft. Hood PX and Killeen, Texas K-Mart
- . Ft. Polk PX and Leesville, Louisiana Walmart
- . Ft. Lewis PX and Lakewood, Washington K-Mart
- . Ft. Devens PX and Leominster, Massachusetts K-Mart
- . Ft. Belvoir PX and Springfield, Virginia K-Mart

The item line prices for the city-pair comparisons are shown in Appendix B in Tables B2 through B6. It will be noted that the item lists are not the same for all cities, as these tables include the comparables list for each city-pair rather than the comparables list on a national basis.

To get the national comparable list, we delete all items denoted by '\*' or '\*+' in Table B1. In addition, to derive our initial price indexes, we exclude larger items from the market basket, such as kitchen wares, power

tools, cameras and other electronic equipment. These excluded items are identified as items 15, 26, 27, 37, 55, 67, 91, 92, and 93 in Table B1.

#### B. COMPARISONS

The market basket, which we call the comparables basket less kitchen, tool, and electronic equipment, is used to derive our first set of price indexes shown in Table 7. The full cost of the market basket ranges from a low of \$138.84 at the Ft. Devens PX to a high of \$179.45 for the same basket at the K-Mart in Lakewood, Washington.

Because the PX does not collect sales taxes or a surcharge from its customers, an identically priced good at the PX and at an off-base retail outlet will, in fact, cost less at the PX than it will off-base. This difference must be accounted for when deriving price indexes for the PX and off-base outlets. Therefore, in this section, all index numbers discussed in the body of the text refer to after-tax costs. However, for comparative purposes, the pre-tax indexes are listed in Tables 7 through 12.

As may be seen from Table 7, there is a wide variation in the indexes, both nationally and by city-pair. Setting Ft. Hood PX as the base for the national index, all PXs have an index less than one except the PX at Ft. Polk. These indexes are interpreted as before. A \$100 market basket at Ft. Hood costs \$101.70 at Ft. Polk, \$97.00 at Ft. Lewis, \$94.70 at Ft. Devens, and \$97.20 at Ft. Belvoir. The cost of this basket would be \$104.10 at the Killeen K-Mart, \$113.60 at the Leesville Walmart, \$122.40 at the Lakewood K-Mart, \$116.80 at the K-Mart in Leominster, and \$112.00 at the Springfield K-Mart.

Table 7

## Price Indexes

## PX and Retail Outlets

## Comparables Less Kitchen, Tool, and Electronic Equipment

Location	With Tax \$ Value of Market Basket	No Tax		No Tax		With Tax	
		National Price Index	City-Pair Price Indexes	National Price Index	City-Pair Price Index	National Price Index	City-Pair Price Index
1. Killeen, Texas							
PX, Ft. Hood	146.65	1.000	1.000	1.000	1.000	1.000	1.000
K-Mart	152.69	1.001	1.001	1.041	1.041	1.041	1.041
2. Leesville, Louisiana							
PX, Ft. Polk	149.14	1.001	1.001	1.017	1.000	1.017	1.000
Walmart	166.57	1.103	1.084	1.136	1.117	1.136	1.117
3. Lakewood, Washington							
PX, Ft. Lewis	142.23	0.970	1.000	0.947	1.000	0.947	1.000
K-Mart	179.45	1.161	1.197	1.224	1.262	1.224	1.262
4. Leominster, Massachusetts							
PX, Ft. Devens	138.84	0.947	1.000	0.947	1.000	0.947	1.000
K-Mart	171.32	1.113	1.175	1.168	1.234	1.168	1.234
5. Springfield, Virginia							
PX, Ft. Belvoir	142.53	0.972	1.000	0.972	1.000	0.972	1.000
K-Mart	164.30	1.088	1.119	1.120	1.153	1.120	1.153

The city-pair comparison is at least as meaningful in this case as is the national index. The Ft. Hood PX total is 3.9% lower than the off-base K-Mart in Killeen, while Walmart in Leesville is 11.7% higher than the same basket at Ft. Polk.

The other comparisons show a larger PX savings. The Lakewood K-Mart is 26.2% higher than Ft. Lewis, the Leominster K-Mart costs 23.4% more than the same basket at Ft. Devens, while the Springfield K-Mart is 15.3% higher than at Ft. Belvoir for our market basket comparison.

When we include the major items, the national price indexes change only slightly, which may be seen by comparing Table 8 with Table 7. Except for the index for the K-Marts in Lakewood, Washington, and Leesville, Louisiana, the indexes change by no more than 2.4%. However, the index at the Leesville Walmart decreases by 5.1% while the index at the Lakewood K-Mart decreases by 3.5%. This is because even though the total cost of these items is greater at Walmart and K-Mart than at the Ft. Hood PX, the percentage differences in prices are smaller than for the initial market basket. In the rest of the outlets, both on and off base, the differences are approximately the same. This also holds with city-pair comparisons, as shown by the city-pair indexes in Tables 7 and 8. The largest increase in this index is 0.8% in Leominster, while the largest decrease, 3.4% was recorded at the Lakewood K-Mart.

Note that the Canon AE-1 camera and lens is still not included in the market basket of comparables shown in Table 8. When we add this item to the market basket, the cost of the basket ranges from a low of \$523.13 at the Ft. Lewis PX to a high of \$672.38 at the K-Mart in Lakewood, Washington. Including this item in the market basket allows us to test for the sensitivity of the indexes to this sizable purchase.



Table 8

## Price Indexes

## PX and Retail Outlets

## Comparables Less Canon Camera

<u>Location</u>	<u>\$ Value of Market Basket</u>	<u>National Price Index</u>	<u>City-pair Price Index</u>	<u>National Price Index</u>	<u>City-Pair Price Index</u>
1. Killeen, Texas					
PX, Ft. Hood	301.65	1.000	1.000	1.000	1.000
K-Mart	314.60	1.003	1.003	1.043	1.043
2. Leesville, Louisiana					
PX, Ft. Polk	298.14	0.971	1.000	0.971	1.000
Walmart	325.30	1.047	1.059	1.078	1.091
3. Lakewood, Washington					
PX, Ft. Lewis	290.78	0.964	1.000	0.964	1.000
K-Mart	356.30	1.121	1.163	1.181	1.225
4. Leominster, Massachusetts					
PX, Ft. Devens	289.84	0.961	1.000	0.961	1.000
K-Mart	359.90	1.136	1.183	1.193	1.242
5. Springfield, Virginia					
PX, Ft. Belvoir	292.28	0.969	1.000	0.969	1.000
K-Mart	331.69	1.068	1.102	1.100	1.135

The indexes derived for the market basket which includes the Canon camera and lens is denoted as the "full set of comparables" because this basket includes every item that can be compared in all stores used in this study. The indexes for this market basket are shown in Table 9.

As seen from Table 9, all national price indexes increase except for the index for the K-Mart in Leominster. The PX indexes increase relative to the Ft. Hood PX because including the camera reduces the relatively small gaps that were present before addition of this product. The off-base indexes increase at all stores except the K-Mart in Leominster. The Leominster index decreases because the percentage difference between the selling price of the Canon camera and lens at the Ft. Hood PX and the Leominster K-Mart is very small, much smaller than for the other items in the market basket.

Finally, we add the Texas Instrument home computer to the full set of comparables in order to determine how additional major purchases of consumer durables will affect the indexes. Since the TI home computer is not sold at the Leesville Walmart, the Ft. Polk PX and the Walmart are excluded from the indexes shown in Table 10. As shown in this table, the index decreases by 2.5% at the Leominster K-Mart because the cost is slightly higher at Ft. Devens than at the Leominster K-Mart. Also, the indexes increase very slightly at the Killeen and Springfield K-Marts, by 0.18% and 0.9% respectively. This is because the prices are higher at these stores, albeit by only a few dollars, than at Ft. Hood and Ft. Belvoir.

To complete the comparison, we derive city-pair price indexes for the comparables for each locale. The additional items included in the market basket are identified as '\*' in Table B1. However, not all items marked with '\*' are in each city basket, as not every store carried each of these goods.<sup>10</sup> Hence, the number of items, as well as the dollar value

Table 9

## Price Indexes

## PX and Retail Outlets

## Full Set of Comparables

Location	\$ Value of Market Basket	With Taxes		
		National Price Index	City-Pair Price Indexes	National Price Index      City-Pair Price Index
1. Killeen, Texas				
PX, Ft. Hood	534.55	1.000	1.000	1.000
K-Mart	584.86	1.052	1.052	1.094
2. Leesville, Louisiana				
PX, Ft. Polk	531.04	0.993	1.000	1.000
Walmart	580.58	1.054	1.061	1.093
3. Lakewood, Washington				
PX, Ft. Lewis	523.68	0.980	1.000	1.000
K-Mart	672.38	1.193	1.218	1.284
4. Leominster, Massachusetts				
PX, Ft. Devens	524.74	0.982	1.000	1.000
K-Mart	611.77	1.090	1.110	1.166
5. Springfield, Virginia				
PX, Ft. Belvoir*	570.18	1.067	1.000	1.000
K-Mart	604.51	1.098	1.029	1.060

\* Canon 50MM lens is F1.4 rather than F1.8 at both the PX at Ft. Belvoir and the Springfield K-Mart

Table 10

## Price Indexes

## PX and Retail Outlets

## Full Set of Comparables Plus TI Home Computer

<u>Location</u>	<u>\$ Value of Market Basket</u>	<u>National Price Index</u>	<u>City-Pair Price Indexes</u>	<u>With Taxes</u>	
				<u>National Price Index</u>	<u>City-Pair Price Index</u>
1. Killeen, Texas					
PX, Ft. Hood	684.55	1.000	1.000	1.000	1.000
K-Mart	750.22	1.054	1.054	1.096	1.096
2. Lakewood, Washington					
PX, Ft. Lewis	667.63	0.975	1.000	0.975	1.000
K-Mart	839.96	1.164	1.194	1.227	1.258
3. Leominster, Massachusetts					
PX, Ft. Devens	674.69	0.986	1.000	0.986	1.000
K-Mart	767.17	1.067	1.083	1.121	1.137
4. Springfield, Virginia					
PX, Ft. Belvoir	714.68	1.044	1.000	1.044	1.000
K-Mart	757.98	1.075	1.030	1.107	1.061

of the market baskets, differs across cities. For this reason, we do not show a national price index for the baskets used in the city-pair comparisons shown in Table 11.

As shown in Table 11, the total dollar values of the baskets are quite large and thus provide additional information on the relative savings in PXs as compared to their local competitors. As compared to the city-pair indexes shown in Table 7 for the much smaller market basket, there is a marked change in the indexes for the K-Marts in Killeen and Leominster, totalling +7.0 and -6.1% respectively. The index for the Lakewood K-Mart registers a decrease of 3.8% while there is a drop in the indexes for the K-Mart at Springfield and the Walmart in Leesville of 6.2% and 4.7% respectively. These changes suggest that in Killeen the percentage differences in prices between the PX and the off-base K-Mart are larger for the added items than they were for the basic basket, while the opposite holds for the remaining locations.

However, as can be seen from the full list of city-pair comparables shown in Tables B2 through B6 in Appendix B, the Sunbeam Mixmaster is of a different quality at the PXs at Ft. Lewis and Ft. Belvoir than at the K-Marts in Lakewood and Springfield. These two PXs offer only the higher priced version of the Sunbeam Mixmaster, at a comparably higher price while the K-Marts offer the lower priced version.<sup>11</sup> We included the Sunbeam Mixmaster, despite the price differential, on the grounds that if a consumer wishes to purchase this product, he must purchase the higher priced version at the Ft. Lewis and Ft. Belvoir PXs or purchase it elsewhere. No other choice is allowed, since these two PXs do not offer the lower priced alternative.

Table 11  
Regional Price Indexes  
PX and Retail Outlets

City-Pair Comparisons, All Comparables			
<u>Location</u>	<u>\$ Value of Market Basket</u>	<u>City-Pair Price Indexes</u>	<u>With Taxes City-Pair Price Index</u>
1. Killeen, Texas			
PX, Ft. Hood	893.71	1.000	1.000
K-Mart	995.48	1.071	1.114
2. Leesville, Louisiana			
PX, Ft. Polk	689.52	1.000	1.000
Walmart	734.30	1.034	1.065
3. Lakewood, Washington			
PX, Ft. Lewis	964.79	1.000	1.000
K-Mart	1171.61	1.152	1.214
4. Leominster, Massachusetts			
PX, Ft. Devens	947.56	1.000	1.000
K-Mart	1097.59	1.103	1.158
5. Springfield, Virginia			
PX, Ft. Belvoir	979.44	1.000	1.000
K-Mart	1058.03	1.049	1.081

Because the PX version is about \$20 higher than the K-Mart offering, the city-pair index is concomitantly lower in Springfield and Lakewood. This is shown in Table 12, where the Sunbeam Mixmaster is deleted from the baskets in these two cities. When this product is deleted, the Lakewood K-Mart index rises by 3.5% while the Springfield K-Mart index registers a 2.4% rise.

Table 12

## Regional Price Indexes

## PX and Retail Outlets

## City-Pair Comparisons, All Comparables Less Sunbeam Mixmaster

<u>Location</u>	<u>\$ Value of Market Basket</u>	<u>City-Pair Price Indexes</u>		<u>With Taxes City-Pair Price Index</u>	
1. Lakewood, Washington					
PX, Ft. Lewis	894.84	1.000		1.000	
K-Mart	1124.21	1.192		1.256	
2. Springfield, Virginia					
PX, Ft. Belvoir	912.74	1.000		1.000	
K-Mart	1010.37	1.075		1.107	



## V. SUMMARY

This paper has presented a two-fold study of military versus civilian prices; a comparative study of commissary and off-base grocery store prices, and a comparison of PX and civilian retail outlet prices. As noted in this report, the price indexes for commissaries and off-base grocery outlets demonstrate savings for commissary users. These savings are invariant to the particular price index employed, as well as composition of the market basket. Because of this, the indexes are likely to show similar savings in locales not sampled in this report.

The results from the PX/retail outlet comparison are much less conclusive than the results obtained from the commissary/grocery outlet comparison. We found that: (1) savings at PXs are largely due to the absence of sales taxes in these stores, and that (2) the amount of savings are extremely sensitive to the composition of the market basket.

The fact that the PX/retail outlet indexes are sensitive to the items chosen for the market basket means that the indexes shown for the PXs are not conclusive. Because the index changes with changes in the market basket, it is not possible to derive an "average" savings. Moreover, because the price index is likely to change depending upon the specific retail outlet chosen, any average savings derived could only be used as a comparison with a particular retail outlet.

As stated above, we found that PX savings were largely due to the absence of sales taxes. However, this can be concluded only for the specific off-base stores sampled. Again, this is because the price indexes are likely to vary with respect to the store chosen for comparison.

Because of the problem associated with indexing PX/retail outlets, we suggest that the Nielsen approach be employed to compute PX savings. The Nielsen method is a survey which compares the price of a specific product at the PX with the price charged for that identical product at several off-base locations. Using this method, one is able to derive an "average" savings for each item sold in the PX. While this method is tedious and cannot be considered an index, it does provide a more useful comparison than the price index approach.

FOOTNOTES

1. Some examples under food are cereal, meats, dairy, fruits and vegetables, and alcoholic beverages.
2. For a description of the method of calculation see Green (1965).
3. Consumer Expenditure Survey: Dairy Survey, 1980-81, Appendix A.
4. To compare direct vs. implicit superlative indexing, see Allan & Diewart (1981).
5. Ruggles' (1961) general critique of the CPI is based on its difficulty in accurately measuring the service sector, its assumptions that productivity and quality do not change, and its failure in the short run in introducing totally new commodities. For a more extensive, specific, and somewhat more mathematical critique, as well as suggestions for improvement, see Cagan and Moore (1981) and Wahl (1982). Wahl claims that with the biases present, the CPI tends to overestimate price changes and hence inflation.
6. For an excellent discussion of these points, see Gavett (1967).
7. For a different result, see DeRosa and Goldstein (1982).
8. The information in this section is based upon our discussions with Scott Simpson, Lt. Col. Dee, and Lt. Col. O'Rourke.
9. The majority of our pre-marketing information was provided by Col. Miner, AAFES Headquarters, Dallas, Texas.
10. The items can be identified by comparing Table B1 with Tables B2 through B6.
11. The only difference between the two models is that the higher priced model included a glass mixing bowl, while the lower priced model included a steel bowl.

APPENDIX A

COMMISSARY AND GROCERY STORE

MARKET BASKETS AND PRICE COMPARISONS

Table A1

Full Market Basket Comparison

Killeen, Texas

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
1. Lean Cuisine Glazed Chicken	\$2.40	\$2.99
2. Green Giant Frozen Corn, 10 oz.	.86	1.13
3. Birds Eye Broccoli Spears, 10 oz.	.62	.85
4. Pepperidge Farms, 4 Cherry Turnovers	.99	1.29
5. Aunt Jemima Waffles, 10 oz.	.73	.89
6. Del Monte Bananas, 1 lb.	.34	.49
7. Sunkist Oranges, 1 lb.	.37	.56
8. Minute Maid Frozen Lemon Juice, 6 fl. oz.	.25	.41
9. Red Delicious Apples, 1 lb.	.29	.99
10. Fresh Tomatoes, 1 lb.	.54	.69
11. Lettuce, Head	.55	.99
12. Celery, Pack	.89	.99
13. Potatoes, Baking, 1 lb.	.25	.04
14. Cucumbers, 1 lb.	.40	.59
15. Green Peppers, 1 lb.	.84	.99
16. Onions, 1 lb.	.18	.34
17. Peaches, 1 lb.	.48	.99
18. Yoplait Cherry Yogart	.41	.59
19. Cottage Cheese, Large Curd, 4% Milkfat, 16 oz.	.92	1.19
20. Sour Cream, 8 oz.	.45	.62
21. Whole milk, 1 Gallon	1.98	1.98 <sup>1</sup>
22. Parkay Margarine, Kraft, Box, 16 oz.	.44	.79
23. Land O'Lakes Butter, 16 oz.	1.80	2.17

Table A1 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
24. Grade AA Large Eggs, 1 Dozen	.70	.89
25. Half and Half, 1 Pint	.59	.63
26. Kraft Natural Sharp Cheddar Cheese, 12 oz.	1.79	1.95 <sup>2</sup>
27. Vanilla Ice Cream, Half Gallon	1.70 <sup>3</sup>	3.19 <sup>3</sup>
28. Gorton's Frozen Fish Fillets, 12 oz.	1.79	2.09
29. Butter Ball Turkey, 10 lbs.	8.00	7.90
30. Rainbo Extra Thin White Bread, Loaf	.55	.69
31. Hormel Cured & Boneless Ham, 5 lbs	12.00	14.90
32. Oscar Meyer Beef Bologna, 8 oz.	.83	1.08 <sup>4</sup>
33. Oscar Meyer Beef Franks, 16 oz.	1.45	2.18
34. Scot Towels, Paper Towels	.50	.93
35. White Cloud Bathroom Tissue, 4 Rolls	.95	1.29 <sup>5</sup>
36. Pampers Disposable Diapers, Box of 48	7.19	9.28
37. Kleenex Facial Tissues, Box of 200	.62 <sup>6</sup>	.89
38. Gulf Lite Charcoal Starter, 32 Fl oz.	1.12	1.79
39. Palmolive Dishwashing Liquid Soap, 32 fl. oz.	1.37	1.99
40. Irish Spring Bath Soap, 5 oz.	.34 <sup>7</sup>	.57
41. Lysol Disinfectant Spray, 12 oz.	1.85	2.39
42. Comet Cleanser, 21 oz.	.60	.73
43. Bounce Fabric Softener, 40 Sheets	1.97	2.59
44. Tide Laundry Detergent, 49 oz	2.06	1.94
45. Glad Sandwich Bags, Box of 150	.65	1.09
46. Nabisco Oreo Cookies, 19 oz.	1.24	2.09

Table A1 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
47. Marlboro Cigarettes, Carton	5.28	7.99
48. Carnation Evaporated Milk, Canned, 13 fl. oz.	.46	.47
49. Gerber Junior Vegetables and Rice, 7½ oz.	.32	.35
50. Del Monte Pudding Cup, Chocolate, 4 cans	.87	1.29
51. Betty Crocker Lemon Cake Mix	.97	.88 <sup>8</sup>
52. Gold Medal Flour, 5 lbs	.89	1.23 <sup>9</sup>
53. Morton Salt, 26 oz.	.32	.31
54. Star Lite Pure Cane Sugar, 5 lbs.	1.49	1.79 <sup>10</sup>
55. Quaker Oats, 18 oz.	.81	.97
56. Coca-Cola, 6 Pack cans, 12 fl. oz. each	1.98	2.79
57. Starkist Chunk Light Tuna	.69	1.13
58. Franco American Spaghetti, Can	.33	.45
59. Folgers Coffee, 2 lbs.	4.96	5.29
60. Spam, 12 oz	1.43	1.49
61. Del Monte Fruit Cocktail, 12 oz.	.55	.75
62. Kraft Macaroni and Cheese, Box	.27	.39
63. Stove Top Stuffing Mix, Chicken, 6 oz.	.81	1.09
64. Hawaiian Fruit Punch, Red, 46 fl. oz.	.59	.79
65. Campbell's Chicken Noodle Soup, Can	.30	.31
66. Hellman's Real Mayonnaise, 16 fl. oz.	.83	1.05
67. Kraft Creamy Italian Dressing, 8 fl. oz.	.60	.93
68. French's Mustard, 9 oz.	.42	.55
69. A1 Steak Sauce, 10 oz.	1.34	1.75

Table A1 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
70. Jiff Creamy Peanut Butter, 18 oz.	1.17	1.79
71. Beef Chuck Pot Roast, 3 lbs.	3.87	8.25
72. Beef Round Steak, 1 lb.	1.99	1.98
73. Beef Sirloin Steak, 1 lb	1.99	3.65
74. T-Bone Steak, 1 lb	2.85	4.29
75. Hamburger, Ground Beef, 1 lb.	1.39	1.29
76. Pork Loin Chops, 1 lb.	1.61	1.79
77. Oscar Meyer Bacon, 16 oz.	1.95	2.89
78. Fresh Chicken Breasts, 1 lb	1.13	1.53
79. Fresh Chicken Drumsticks, 1 lb.	.90	1.29
80. Jimmy Dean Pork Sausage, 16 oz.	1.53	2.49
81. Minute Maid Frozen Orange Juice, 12 fl. oz.	.97	.99
	TOTAL \$114.70	\$152.23

1. Sale Price, Regular Price \$2.23.
2. Ten Ounce Size.
3. Commissary: Borden; Safeway: Blue Bell
4. Sale Price. Regular price: \$1.29
5. Nice-N-Soft Brand
6. Sale price. Regular price, 76¢
7. Sale price, Regular price, 46¢
8. Sale price. Regular price 89¢
9. Sale price. Regular price \$1.35
10. Towme House Brand
11. Seven Seas Brand



Table A2

Full Market Basket Comparison  
Leesville, Louisiana

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Piggly Wiggly</u>
1. Lean Cuisine Glazed Chicken	\$2.40	\$2.94
2. Green Giant Frozen Corn, 10 oz.	.96	1.07
3. Birds Eye Broccoli Spears, 10 oz.	.49	.78
4. Pepperidge Farms, 4 Cherry Turnovers	.92	1.26
5. Aunt Jemima Waffles, 10 oz.	.73	.93
6. Del Monte Bananas, 1 lb.	.36	.59
7. Sunkist Oranges, 1 lb.	.32	.59 <sup>1</sup>
8. Minute Maid Frozen Lemon Juice, 6 fl. oz.	.25	.40
9. Red Delicious Apples, 1 lb.	.43	.79
10. Fresh Tomatoes, 1 lb.	.37	.79
11. Lettuce, Head	.55	.44
12. Celery, Pack	.74	.89
13. Potatoes, Baking, 1 lb.	.22	.49
14. Cucumbers, 1 lb.	.29	.34
15. Green Peppers, 1 lb.	.59	.69
16. Onions, 1 lb.	.12	.25
17. Peaches, 1 lb.	.53	.59 <sup>2</sup>
18. Yoplait Cherry Yogart	.35 <sup>3</sup>	.44 <sup>3</sup>
19. Cottage Cheese, Large Curd, 4% Milkfat, 16 oz.	.60	1.39
20. Sour Cream, 8 oz.	.46	.79
21. Whole milk, 1 Gallon	1.73	2.19
22. Parkay Margarine, Kraft, Box, 16 oz.	.41 <sup>4</sup>	.45
23. Land O'Lakes Butter, 16 oz.	1.09	2.60

Table A2 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Piggly Wiggly</u>
24. Grade AA Large Eggs, 1 Dozen	.70	.89
25. Half and Half, 1 Pint	.65	.82
26. Kraft Natural Sharp Cheddar Cheese, 12 oz.	1.30	2.00
27. Borden Vanilla Ice Cream, Half Gallon	1.55 <sup>5</sup>	2.39
28. Gorton's Frozen Fish Fillets, 12 oz.	1.66	2.12
29. Butter Ball Turkey, 10 lbs.	7.40	8.90
30. Rainbo Extra Thin White Bread, Loaf	.48 <sup>6</sup>	.99 <sup>7</sup>
31. Hormel Cured & Boneless Ham, 5 lbs.	9.10	12.45
32. Oscar Meyer Beef Bologna, 8 oz.	.89	1.29
33. Oscar Meyer Beef Franks, 16 oz.	1.48	2.19
34. Scot Towels, Paper Towels	.55	.79
35. White Cloud Bathroom Tissue, 4 Rolls	.95	1.28 <sup>8</sup>
36. Pampers Disposable Diapers, Box of 48	8.05	9.33
37. Kleenex Facial Tissues, Box of 200	.62	.98
38. Gulf Lite Charcoal Starter, 32 fl. oz.	1.12	1.64
39. Palmolive Dishwashing Liquid Soap, 32 fl. oz.	1.74	1.88
40. Irish Spring Bath Soap, 5 oz.	.34	.46 <sup>9</sup>
41. Lysol Disinfectant Spray, 12 oz.	1.85	2.45
42. Comet Cleanser, 21 oz.	.60	.73
43. Bounce Fabric Softener, 40 Sheets	1.97	2.51
44. Tide Laundry Detergent, 49 oz.	2.06	2.16
45. Glad Sandwich Bags, Box of 150	.81	1.09
46. Nabisco Oreo Cookies, 19 oz.	1.53	1.99

Table A2 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Piggly Wiggly</u>
47. Marlboro Cigarettes, Carton	5.28	7.26
48. Carnation Evaporated Milk, Canned, 13 fl. oz.	.50	.55
49. Gerber Junior Vegetables and Rice, 7½ oz.	.27	.62
50. Del Monte Pudding Cup, Chocolate, 4 Cans	.85 <sup>10</sup>	1.42 <sup>10</sup>
51. Betty Crocker Lemon Cake Mix	.59	.77
52. Gold Medal Flour, 5 lbs.	.89	1.17
53. Morton Salt, 26 oz.	.25	.36
54. Star Lite Pure Cane Sugar, 5 lbs.	1.52 <sup>11</sup>	.99
55. Quaker Oats, 18 oz.	.84	1.06
56. Coca-Cola, 6 Pack, Cans, 12 fl. oz. each	1.80	1.89
57. Star Kist Chunk Light Tuna	.69	1.19
58. Franco American Spaghetti, Can	.33	.44
59. Folgers Coffee, 2 lbs.	4.69	4.86
60. Spam, 12 oz.	1.43	1.85
61. Del Monte Fruit Cocktail, 12 oz.	.55	.80
62. Kraft Macaroni and Cheese, Box	.38	.44
63. Stove Top Stuffing Mix, Chicken, 6 oz.	.81	1.11
64. Hawaiian Fruit Punch, Red, 46 fl. oz.	.59	.96
65. Campbell's Chicken Noodle Soup, Can	.30	.35
66. Hellman's Real Mayonnaise, 16 fl. oz.	.83	1.05
67. Kraft Creamy Italian Dressing, 8 fl oz.	.60	.90
68. French's Mustard, 9 oz.	.42	.54
69. A-1 Steak Sauce, 10 oz.	1.34	2.13

Table A2 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Piggly Wiggly</u>
70. Jiff Creamy Peanut Butter, 18 oz.	1.17	1.74
71. Beef Chuck Pot Roast, 3 lbs.	4.47	3.87
72. Beef Round Steak, 2 lbs	2.14	2.89
73. Beef Sirloin Steak, 1 lb	2.14	3.79
74. T-Bone Steak, 1 lb.	2.99	1.89
75. Hamburger, Ground Beef, 1 lb	1.19	1.79
76. Pork Loin Chops, 1 lb.	1.09	1.99
77. Oscar Meyer Bacon, 16 oz.	1.91	2.99
78. Fresh Chicken Breasts, 1 lb.	2.13	1.49
79. Fresh Chicken Drumsticks, 1 lb.	.86	1.19
80. Jimmy Dean Pork Sausage, 16 oz.	1.59	2.69 <sup>12</sup>
81. Minute Maid Frozen Orange Juice, 12 fl. oz.	.89	1.13
	TOTAL \$110.88	143.18

1. Sale Price. Regular price = 69¢/lb.
2. Sale Price. Regular price = 89¢/lb.
3. Yami Brand, both stores, 8 oz.
4. Sale Price. Regular Price = 65¢
5. Midwest Farms Brand.
6. Sunbeam Thin
7. Holsum Thin
8. Charmin
9. Average price per bar. Sale is 3 for \$1.83 (with one free).
10. Hunts brand, both stores.
11. White Gold brand.
12. Owen's brand.

Table A3

Market Basket Comparison  
Lakewood, Washington

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
1. Lean Cuisine Glazed Chicken	\$2.37	\$3.09
2. Green Giant Frozen Corn, 10 oz.	.86	1.03
3. Birds Eye Broccoli Spears, 10 oz.	.53 <sup>1</sup>	.75 <sup>1</sup>
4. Pepperidge Farms, 4 Cherry Turnovers	.99	1.29
5. Aunt Jemima Waffles, 10 oz.	.77 <sup>2</sup>	.95 <sup>2</sup>
6. Del Monte Bananas, 4 lb.	.27	.59
7. Sunkist Oranges, 1 lb.	.38	.59
8. Minute Maid Frozen Lemon Juice, 6 fl oz.	.25	.31
9. Red Delicious Apples, 1 lb.	.50	.59
10. Fresh Tomatoes, 1 lb.	.57	.79
11. Lettuce, Head	.39	.39 <sup>3</sup>
12. Celery, Pack	.69	.79
13. Potatoes, Baking, 1 lb	.20	.49
14. Cucumbers, 1 lb.	.26	.39
15. Green Peppers, 1 lb.	.33	.98
16. Onions, 1 lb.	.12	.25
17. Peaches, 1 lb	.39	.59
18. Yoplait Cherry Yogart	.44	.65
19. Cottage Cheese, Large Curd, 4% Milkfat, 16 oz.	.69	.79
20. Sour Cream, 8 oz.	.35	.49
21. Whole milk, 1 Gallon	1.65	2.09
22. Parkay Margarine, Kraft, Box, 16 oz.	.76	.95
23. Land O'Lakes Butter, 16 oz.	1.83	1.68 <sup>4</sup>

Table A3 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
24. Grade AA Large Eggs, 1 Dozen	.77	.98
25. Half and Half, 1 Pint	.39	.53
26. Kraft Natural Mild Cheddar Cheese, 12 oz.	1.28	1.79
27. Vanilla Ice Cream, Half Gallon	1.35 <sup>5</sup>	2.59
28. Gorton's Frozen Fish Fillets, 12 oz.	1.73	2.49
29. Butter Ball Turkey, 10 lbs	8.30	12.90
30. Rainbo Extra Thin White Bread, Loaf	.45 <sup>6</sup>	.89
31. Hormel Cured & Boneless Ham, 5 lbs.	6.45 <sup>7</sup>	9.95
32. Oscar Meyer Beef Bologna, 8 oz.	.84	1.99 <sup>8</sup>
33. Oscar Meyer Beef Franks, 16 oz	1.46	2.19 <sup>9</sup>
34. Scot Towels, Paper Towels	.55	.83
35. White Cloud Bathroom Tissue & Rolls	.89 <sup>10</sup>	1.29 <sup>10</sup>
36. Pampers Disposable Diapers, Box of 48	8.05	9.69
37. Kleenex Facial Tissues, Box of 200	.76	.79 <sup>11</sup>
38. Gulf Lite Charcoal Starter, 32 fl. oz.	1.25 <sup>12</sup>	1.59 <sup>12</sup>
39. Palmolive Dishwashing Liquid Soap, 32 fl. oz.	1.39	2.05 <sup>13</sup>
40. Irish Spring Bath Soap, 5 oz.	.34	.83
41. Lysol Disinfectant Spray, 12 oz.	1.63	2.69
42. Comet Cleanser, 21 oz.	.60	.79
43. Bounce Fabric Softener, 40 Sheets	1.99	2.65
44. Tide Laundry Detergent, 49 oz.	2.06	2.10
45. Glad Sandwich Bags, Box of 150	.65	1.19
46. Nabisco Oreo Cookies, 19 oz.	1.53 <sup>14</sup>	2.19

Table A3 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
47. Marlboro Cigarettes, Carton	5.28	9.18
48. Carnation Evaporated Milk, Canned, 13 fl. oz.	.50	.58
49. Gerber Junior Vegetables and Rice, 7½ oz.	.18	.38
50. Del Monte Pudding Cup, Chocolate, 4 cans	1.03 <sup>15</sup>	1.45
51. Betty Crocker Lemon Cake Mix	.59	.99
52. Gold Medal Flour, 5 lbs.	.99	1.39
53. Morton Salt, 26 oz.	.32	.43
54. Star Lite Pure Cane Sugar, 5 lbs.	1.46 <sup>16</sup>	1.95 <sup>16</sup>
55. Quaker Oats, 18 oz.	.84	1.05
56. Coca Cola, 6 Pack, Cans 12 fl. oz. each	1.39	1.99 <sup>17</sup>
57. Star Kist Chunk Light Tuna	.69	.87
58. Franco American Spaghetti, Can	.33	.45
59. Folgers Coffee, 2 lbs.	3.97	5.65
60. Spam, 12 oz.	1.43	1.89
61. Del Monte Fruit Cocktail, 12 oz.	.64	.85
62. Kraft Macaroni and Cheese, Box	.34	.49
63. Stove Top Stuffing Mix, Chicken, 6 oz.	.81	1.15
64. Hawaiian Fruit Punch, Red, 46 fl. oz.	.59	.99
65. Campbell's Chicken Noodle Soup, Can	.30	.36
66. Hellman's Real Mayonnaise, 16 fl. oz.	1.54	1.05 <sup>18</sup>
67. Kraft Creamy Italian Dressing, 8 fl. oz.	.74 <sup>19</sup>	.99 <sup>20</sup>
68. French's Mustard, 9 oz.	.64 <sup>21</sup>	.59
69. Al Steak Sauce, 10 oz.	1.34	2.05

Table A3 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
70. Jiff Creamy Peanut Butter, 18 oz.	1.17	1.83
71. Beef Chuck Pot Roast, 3 lbs.	8.16	3.57
72. Beef Round Steak, 1 lb.	2.72	3.49
73. Beef Sirloin Steak, 1 lb	2.28	4.09
74. T-Bone Steak, 1 lb.	3.19	4.19
75. Hamburger, Ground Beef, 1 lb.	1.19	.99
76. Pork Loin Chops, 1 lb.	1.29	1.59
77. Oscar Meyer Bacon, 16 oz.	1.89	2.79
78. Fresh Chicken Breasts, 1 lb.	1.59	2.39
79. Fresh Chicken Drumsticks, 1 lb.	1.19	1.59
80. Jimmy Dean Pork Sausage, 16 oz.	1.48	2.19
81. Minute Maid Frozen Orange Juice, 12 fl. oz.	.89	1.33
	TOTAL 113.26	152.28

1. Commissary: Vip brand. Safeway: Bel Air Brand.
2. Eggs brand, both stores.
3. Sale price. Regular price unknown.
4. Sale price. Regular price \$1.85.
5. Royale (Carnation) brand.
6. Langendorf brand.
7. Hygrades brand.
8. Twelve ounce size.
9. Not all beef.
10. Charmin, both stores.
11. Sale price. Regular price \$1.05.
12. Commissary: Wizard brand. Safeway: Safeway brand.
13. Sale price. Regular price \$2.25
14. Twenty ounce size.
15. Hunts brand.
16. Commissary: Am Star brand. Safeway: Townhouse.
17. Sale price. Regular price \$2.39,
18. Kraft.
19. Wishbone.
20. Kraft Creamy Cucumber.
21. Does not carry 9 ounce, only 24 ounce jar.



Table A4

Market Basket Comparison  
Leominster, Massachusetts

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Victory Market</u>
1. Lean Cuisine Glazed Chicken	1.99 <sup>1</sup>	2.99
2. Green Giant Frozen Corn, 10 oz.	.86	.99
3. Birds Eye Broccoli Spears, 10 oz.	.62	.69
4. Pepperidge Farms, 4 Cherry Turnovers	.99	1.29
5. Aunt Jemima Waffles, 10 oz.	.73	.89
6. Del Monte Bananas, 1 lb.	.36	.39
7. Sunkist Oranges, 1 lb.	.42	.85
8. Minute Maid Frozen Orange Juice, 12 fl. oz.	.89	1.19
9. Red Delicious Apples, 1 lb.	.54	.59
10. Fresh Tomatoes, 1 lb.	.50	.69
11. Lettuce, Head	.59	.50
12. Celery, Pack	.69	.99
13. Potatoes, Baking, 1 lb.	.22	.49
14. Cucumbers, 1 lb.	.17	.88
15. Green Peppers, 1 lb.	.41	.69
16. Onions, 1 lb.	.12	.45
17. Peaches, 1 lb.	.53	.89
18. Yoplait Cherry Yogart	.45	.50
19. Cottage Cheese, Large Curd, 4% Milkfat, 16 oz.	.69	1.09
20. Sour Cream, 8 oz.	.35	.69
21. Whole Milk, 1 Gallon	1.55	1.85
22. Parkay Margarine, Kraft, Box, 16 oz.	.45	.55
23. Land O'Lakes Butter, 16 oz.	1.80	1.99

Table A4 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Victory Market</u>
24. Grade AA Large Eggs, 1 Dozen	.76	.89
25. Half and Half, 1 Pint	.48	.59
26. Kraft Natural Mild Cheddar Cheese, 12 oz.	1.37	1.89
27. Vanilla Ice Cream, Half Gallon	1.33 <sup>3</sup>	1.99
28. Gorton's Frozen Fish Fillets, 12 oz.	2.04	2.29
29. Butter Ball Turkey, 10 lbs.	6.90 <sup>4</sup>	8.90
30. Rainbo Extra Thin White Bread, Loaf	.69 <sup>5</sup>	1.03 <sup>5</sup>
31. Hormel Cured & Boneless Ham, 5 lbs.	7.15 <sup>6</sup>	13.95 <sup>6</sup>
32. Oscar Meyer Beef Bologna, 8 oz.	.85	1.35
33. Oscar Meyer Beef Franks, 16 oz.	1.39 <sup>7</sup>	2.09
34. Scot Towels, Paper Towels	.59	.75
35. White Cloud Bathroom Tissue, 4 rolls	.95	1.19
36. Pampers Disposable Diapers, Box of 48	7.72	8.89
37. Kleenex Facial Tissues, Box of 200	.63	.79
38. Gulf Lite Charcoal Starter, 32 fl. oz.	1.25 <sup>8</sup>	1.59
39. Palmolive Dishwashing Liquid Soap, 32 fl. oz.	1.39	2.09
40. Irish Spring Bath Soap, 5 oz.	.34 <sup>9</sup>	.45
41. Lysol Disinfectant Spray, 12 oz.	1.62	2.29
42. Comet Cleanser, 21 oz.	.60	.69
43. Bounce Fabric Softener, 40 Sheets	1.97	2.49
44. Tide Laundry Detergent, 49 oz.	2.06	2.29
45. Glad Sandwich Bags, Box of 150	.65	1.09
46. Nabisco Oreo Cookies, 19 oz.	1.30	2.09

Table A4 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Victory Market</u>
47. Marlboro Cigarettes, Carton	5.28	9.17
48. Carnation Evaporated Milk, Canned, 13 fl. oz.	.50	.59
49. Gerber Junior Vegetables and Rice, 7½ oz.	.30	.27
50. Del Monte Pudding Cup, Chocolate, 4 cans	.95	1.29 <sup>10</sup>
51. Betty Crocker Lemon Cake Mix	.59	.69
52. Gold Medal Flour, 5 lbs.	.89	.99
53. Morton Salt, 26 oz.	.34	.41
54. Star Lite Pure Cane Sugar, 5 lbs.	1.56	1.79 <sup>11</sup>
55. Quaker Oats, 18 oz.	.84	.99
56. Coca-Cola, 6 Pack, Cans 12 fl. oz. each	1.38	1.89
57. Star Kist Chunk Light Tuna	.69	1.19
58. Franco American Spaghetti, Can	.33	.40
59. Folgers Coffee, 2 lbs	4.69	2.49 <sup>12</sup>
60. Spam, 12 oz.	1.21	1.49
61. Del Monte Fruit Cocktail, 12 oz.	.57	.79
62. Kraft Macaroni and Cheese, Box	.29	.50
63. Stove Top Stuffing Mix, Chicken, 6 oz	.81	.99
64. Hawaiian Fruit Punch, Red, 46 fl. oz.	.59	.79
65. Campbell's Chicken Noodle Soup, Can	.30	.40
66. Hellman's Real Mayonnaise, 16 fl. oz.	.71	.99
67. Kraft Creamy Italian Dressing, 8 fl. oz.	.71	.89
68. French's Mustard, 9 oz.	.42	.50
69. Al Steak Sauce, 10 oz.	1.34	1.89

Table A4 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Victory Market</u>
70. Jiff Creamy Peanut Butter, 18 oz.	1.17	1.69
71. Beef Chuck Port Roast, 3 lbs.	4.77	6.87
72. Beef Round Steak, 2 lbs.	1.89	2.39
73. Beef Sirloin Steak, 1 lb.	3.49	3.99
74. T-Bone Steak, 1 lb.	3.19	4.99
75. Hamburger, Ground Beef, 1 lb.	1.09	1.99
76. Pork Loin Chops, 1 lb.	1.19	1.89
77. Oscar Meyer Bacon, 16 oz.	1.90	2.49
78. Fresh Chicken Breasts, 1 lb.	1.21	1.69
79. Fresh Chicken Drumsticks, 1 lb.	.80	1.09
80. Jimmy Dean Pork Sausage, 16 oz.	1.43 <sup>13</sup>	1.99
81. Minute Maid Frozen Lemon Juice, 6 fl. oz.	.25	.25 <sup>14</sup>
TOTAL	\$107.62	\$146.52

1. Weight Watchers, 11 ounce.
2. Bartlett
3. Natural Country brand
4. Marvel brand.
5. Sunbeam brand, both stores.
6. Commissary: Schonland's Safeway: Colonial
7. Schonland's brand
8. Wizard brand
9. Sale price. Regular 46c
10. Hunts brand, both stores.
11. Domino brand
12. Carry only 1 and 3 pound cans. Price listed is for 1 lb.
13. Kirschner brand.
14. Parade brand.

Table A5

Full Market Basket Comparison  
Springfield, Virginia

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
1. Lean Cuisine Glazed Chicken	\$2.40	\$3.29
2. Green Giant Frozen Corn, 10 oz.	.86	1.29
3. Birds Eye Broccoli Spears, 10 oz.	.55 <sup>1</sup>	.89 <sup>1</sup>
4. Pepperidge Farms, 4 Cherry Turnovers	.92	1.39
5. Aunt Jemima Waffles, 10 oz.	.73	.89
6. Del Monte Bananas, 1 lb.	.27	.49
7. Sunkist Oranges, 1 lb.	.52	.29
8. Minute Maid Frozen Lemon Juice, 6 fl. oz.	.25	.40
9. Red Delicious Apples, 1 lb.	.56	.79
10. Fresh Tomatoes, 1 lb	.84	.48
11. Lettuce, Head	.62	.38
12. Celery, Pack	.79	1.48
13. Potatoes, Baking, 1 lb.	.19	.49
14. Cucumbers, 1 lb.	.29	.64
15. Green Peppers, 1 lb.	.43	.65
16. Onions, 1 lb.	.23	.39
17. Peaches, 1 lb.	.42	.89
18. Yoplait Cherry Yogart	.41	.45
19. Cottage Cheese, Large Curd, 4% Milkfat, 16 oz.	.78	.89
20. Sour Cream, 8 oz.	.53	.45
21. Whole milk, 1 Gallon	1.66	1.59
22. Parkay Maragarine, Kraft, Box, 16 oz.	.41 <sup>2</sup>	.59
23. Land O'Lakes Butter, 16 oz.	1.79	2.15

Table A5 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
24. Grade AA Large Eggs, 1 Dozen	.75	.99
25. Half and Half, 1 Pint	.48	.59
26. Kraft Natural Mild Cheddar Cheese, 10 oz.	1.37	1.99 <sup>3</sup>
27. Vanilla Ice Cream, Half Gallon	1.94 <sup>4</sup>	1.99 <sup>4</sup>
28. Gorton's Frozen Fish Fillets, 12 oz.	1.71	2.09
29. Butter Ball Turkey, 10 lbs	10.90	15.90
30. Rainbo Extra Thin White Bread, Loaf	.48 <sup>5</sup>	.99
31. Hormel Cured & Boneless Ham, 5 lbs.	10.45 <sup>6</sup>	18.45
32. Oscar Meyer Beef Bologna, 8 oz.	.86	1.19
33. Oscar Meyer Beef Franks, 16 oz.	1.47	1.89
34. Scot Towels, Paper Towels	.49	.93
35. White Cloud Bathroom Tissue, 4 Rolls	.95	1.43
36. Pampers Disposable Diapers, Box of 48	7.19	8.78
37. Kleenex Facial Tissues, Box of 200	.96 <sup>7</sup>	1.03
38. Gulf Lite Charcoal Starter, 32 fl. oz.	.98	1.59
39. Palmolive Dishwashing Liquid Soap, 32 fl. oz	1.39 <sup>8</sup>	2.05
40. Irish Spring Bath Soap, 5 oz.	.38 <sup>9</sup>	.63
41. Lysol Disinfectant Spray, 12 oz.	1.85	2.29
42. Comet Cleanser, 21 oz.	.60	.75
43. Bounce Fabric Softener, 40 Sheets	1.97	2.50
44. Tide Laundry Detergent, 49 oz.	2.06	2.09
45. Glad Sandwich Bags, Box of 150	.81	1.09
46. Nabisco Oreo Cookies, 19 oz.	1.53	2.13

Table A5 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
47. Marlboro Cigarettes, Carton	5.28	7.89
48. Carnation Evaporated Milk, Canned, 13 fl. oz.	.46	.69
49. Gerber Junior Vegetables and Ric, 7½ oz.	.21	.30
50. Del Monte Pudding Cup, Chocolate, 4 Cans	1.06 <sup>10</sup>	1.53 <sup>10</sup>
51. Betty Crocker Lemon Cake Mix	.59	.88
52. Gold Medal Flour, 5 lbs.	.99	1.25
53. Morton Salt, 26 oz.	.34	.40
54. Star Lite Pure Cane Sugar, 5 lbs.	1.74	2.19
55. Quaker Oats, 18 oz.	.84	1.09
56. Coca-Cola, 6 Pack, Cans, 12 fl. oz. each	1.39	2.59
57. Star Kist Chunk Light Tuna	.69	.98
58. Franco American Spaghetti, Can	.33	.48
59. Folgers Coffee, 2 lbs	3.97	4.89
60. Spam, 12 oz.	1.21 <sup>11</sup>	1.59
61. Del Monte Fruit Cocktail, 12 oz.	.57	.83
62. Kraft Macaroni and Cheese, Box	.31	.50
63. Stove Top Stuffing Mix, Chicken, 6 oz.	.81	1.13
64. Hawaiian Fruit Punch, Red, 46 fl. oz.	.57	.79
65. Campbell's Chicken Noodle Soup, Can	.30	.43
66. Hellman's Real Mayonnaise, 16 fl. oz.	.68	1.19
67. Kraft Creamy Italian Dressing, 8 fl. oz.	.56 <sup>12</sup>	.99
68. French's Mustard, 9 oz.	.39	.55
69. Al Steak Sauce, 10 oz.	1.34	2.19

Table A5 continued

<u>Item</u>	<u>Prices</u>	
	<u>Commissary</u>	<u>Safeway</u>
70. Jiff Creamy Peanut Butter, 18 oz.	1.38	1.83
71. Beef Chuck Pot Roast, 3 lbs.	3.87	7.77
72. Beef Round Steak, 2 lbs.	2.35	3.99
73. Beef Sirloin Steak, 1 lbs.	2.79	3.29
74. T-Bone Steak, 1 lb.	3.19	4.29
75. Hamburger, Ground Beef, 1 lb.	.79	1.39
76. Pork Loin Chops, 1 lb.	.99	2.89
77. Oscar Meyer Bacon, 16 oz.	1.45 <sup>13</sup>	1.99 <sup>13</sup>
78. Fresh Chicken Breasts, 1 lb.	1.19	1.79
79. Fresh Chicken Drumsticks, 1 lb.	.69	1.39
80. Jimmy Dean Pork Sausage, 17 oz.	1.60 <sup>14</sup>	2.29 <sup>14</sup>
81. Minute Maid Frozen Orange Juice, 12 fl oz.	.89	1.09
TOTAL	\$113.83	\$163.95

1. Bel Air Brand, both stores.
2. Sale price. Regular price 65c
3. Land O Lakes brand.
4. Commissary brand: Sealtest. Safeway brand: Lucerne.
5. Sunbeam brand.
6. Kuzqler brand.
7. Do not carry box of 200. Box of 280 only.
8. Dawn brand.
9. Coast Soap
10. Hunts brand, both stores.
11. Sale price. Regular price \$1.43
12. Sale price. Regular price 71c
13. Rath brand, both stores
14. Bob Evans brand, both stores.



Table A6  
CPI Basket and Weights

<u>Items</u>	<u>BLS Weights</u>
A. Cereals and Bakery Products	1.700
Quaker Oats	
Gold Medal Flour	
Rainbo White Bread, Loaf	
Nabisco Oreo Cookies	
Peppridge Farms Cherry Turnovers	
B. Meats, Poultry, Fish, and Eggs	4.216
Hamburger	
Chuck Pot Roast	
Round Steak	
Sirloin Steak	
T - Bone Steak	
Oscar Mayer Bacon	
Pork Loin Chops	
Hormel Boneless Ham	
Jimmy Dean Sausage	
Oscar Mayer Beef Franks	
Oscar Mayer Bologna	
Fresh Chicken Breasts	
Fresh Drumsticks	
Butterball Turkey	
Star-Kist Tuna	
Gorton's Frozen Fish Filets	
Grade AA Large Eggs	

Table A6 continued

C. Dairy Products	1.699
Whole Milk	
Half and Half	
Land O'Lakes Butter	
Kraft Mild Cheddar Cheese	
Borden Vanilla Ice Cream	
D. Fruits and Vegetables	
Del Monte Bananas	
Sunkist Oranges	
D'Anjou Pears	
Red Delicious Apples	
Peaches	
Fresh Tomatoes	
Celery	
Lettuce	
Cucumbers	
Green Peppers	
Potatos	
Onions	
Green Giant Niblets Corn	
Birds Eye Broccoli Spears	
E. Other Foods at Home	3.391
Star Lite Pure Cane Sugar	
Betty Crocker Lemon Cake Mix	
Parkay Margarine	
Carnation Evaporated Milk	

Table A6 continued

Jiff Creamy Peanut Butter  
Kraft Creamy Italian Dressing  
Coca-Cola  
Folger's Coffee  
Hawaiian Fruit Punch  
Lean Cuisine Glazed Chicken  
Campbell's Chicken Noodle Soup  
Aunt Jemima Original Waffles  
Del Monte Pudding Cup, Chocolate  
Morton Salt  
Helmann's Real Mayonnaise  
French's Mustard  
Al Steak Sauce  
Gerber Junior Vegetables and Chicken  
Franco American Spaghetti, Can  
Spam  
Kraft Macaroni and Cheese Dinner  
Stove Top Stuffing Mix

APPENDIX B

PX AND RETAIL OUTLET

MARKET BASKETS AND PRICE COMPARISONS

Table B1

PX and Retail Store Outlet

Market Basket

Item

1. Disposable (Cricket) Lighter
2. Eveready Commander Flashlight
3. Ray-O-Vac General Purpose, Size D Batteries, Pack of 2
- \* 4. Wilson Pro-Staff Tennis Racquet
- \*+5. Rawlings NFL Football
- \* 6. Weber Smokey Joe Barbeque, Portable
- \* 7. Gulf Lite Charcoal Starter, 32 Fl. Oz.
- \* 8. Arrow Charcoal Briquets, 10 lb. Bag
9. Atra Shaving Cartridges, Pack of 10
10. Westinghouse Softlite Lightbulbs, 60 W, pack of 4
11. Kiwi Black Shoe Polish, 2½ g.
12. Time-Zero Supercolor SX-70 Land Film, Polaroid, 10 Pictures
13. Tucker Housewares 20 Gallon Tank Container, Plastic, with lid
- \*+14. Sunbeam Mixmaster Infinite Speed Mixer
15. Rival Crockpot, Stoneware, Slow Cooker, 3½ quart
- \* 16. Litton Meal-In-One Microwave
17. Cheesecloth, White
18. Oil Drain Pan
- \*+19. Tire Pressure Gauge
- \*+20. One Gallon Gas Can

Table B1 continued

- 21. Motor Oil, Quart
- \* 22. Electrical Tape, 3/4"
- \* 23. Formby's Furniture Refinisher, 32 Oz.
- \* 24. Counselor Bath Scale, White
- \* 25. Lock Combination with Cable, Master Lock
- 26. Black and Decker Drill, 1/4" Single Speed, Model 7004
- 27. Black and Decker Dustbuster Cordless Vacuum
- 28. Pearl Drop Tooth Polish, Spearmint
- 29. Pro Soft-Edge Toothbrush
- \* 30. Waxed Dental Floss, 100 yards
- \*+31. Scope Mouthwash, 6.0 oz.
- 32. Silkience Regular Shampoo, 15 Fl. Oz.
- 33. Silkience Regular Conditioner, 15 Fl. Oz.
- \*+34. Gillette Dry Look Hairspray, Regular, 5 Oz.
- \*+35. Blow-Dryer, Prostyle/5 Attachments, 1500 W
- \*+36. Remington Triple Head Men's Shaver
- 37. Remington Ladies' Shaver, Lady Remington
- \*38. G. E. Curling Iron, Touch 'N Curl Mist
- 39. Toni Silkwaves Home Perm
- 40. Gillette Foamy Shaving Cream, 11 oz. Regular
- 41. Trac II Razor
- 42. Ladies Razor, Just Whistle
- \*+43. Skin Bracer After Shave Lotion, 4 Oz.
- \* 44. Revolving Lazy Susan Ironware
- 45. Men's Jockey Cotton Briefs, Package of 3

Table B1 continued

- 46. Men's Jockey Crew Neck T-Shirt, Package of 3
- 47. Burlington Socks, Dress Nylon
- \* 48. Men's Automatic Folding Umbrella, Black, Totes
- 49. Halogen Headlamp, G.E.
- \* 50. Locking Gas Cap
- 51. Spark Plugs, Package of 4
- 52. Ace Air Filters
- 53. Trico Wiper Blade
- \*+54. Armorall Protectant, 8 Fl. Oz.
- 55. G.E. Brew Starter Coffee Maker, 10 cup
- \*+56. Hefty Trash Bags, Box of 20
- 57. Kitchen Broom, Washable
- 58. Purex Bleach, 1 Gallon
- 59. Ironing Table, Lady Seymour
- \* 60. Skilcraft Double Duty Ironing Board Cover
- \*+61. Scotch Magic Transparent Tape, 800
- \* 62. Thermos, Go Stopper, Plastic, 36 Oz.
- \* 63. Eureka Vibra Groomer II Vacuum Cleaner, 3.0 HP, Model #3760
- \* 64. TI Home Computer, Ti 994A, Without Accessories
- 65. Atari 2600 Cassette, "Raiders of the Lost Ark"
- \* 66. Smith Corona Typewriter, Enterprise CIT
- 67. GE AM/FM Clock Radio, Digital
- \* 68. Pioneer G22/G2 AM/FM Component Stereo System
- 69. Album, Alabama, "The Closer You Get..."
- \* 70. Yamaha Folk Guitar, YFG-335

- \*+71. Alka-Seltzer Plus Cold Medicine, 36 Tablets
- \*+ 72. Bufferin Extra Strength, 60 Tablets
- 73. Vaseline Intensive Care Lotion, 10 Fl. Oz.
- \* 74. Cannon Royal Classic, 100% Virgin Acrylic Blanket, King Size
- 75. Springmaid, Wondercale No-Iron Percale Queen Fitted Sheet
- \* 76. Nike Men's Jogger Oceania, Style #1780
- \* 77. Converse Women's Tennis Shoes, 'Chris Evert'
- \* 78. Stride Rite Baby Shoe, White, Ankle High, Style #10870-06 (Size 3-6)
- \*+79. Ladies Chic Jeans, "Missy Chic"
- \*+80. Men's Levi Jeans, Saddleman Boot Jeans
- \*+81. Carter's Layette Infant Gown
- \*+82. Dolly Toy (TM), Wonderful World of Disney Musical Mobile
- \* 83. Carter's Bed Time Set
- 84. Sheer Energy Pantyhose, Control Top, Size A
- \*+85. Pampers, Day and Night Disposable Diapers, Box of 48
- \*+86. Timex, Ladies, Sportster Watch
- \* 87. Timex, Men's Sportsquartz Watch
- \* 88. Seiko Quartz Men's Watch, Sports 100 Alarm Chronograph
- \*+89. TI Business Analyst II Calculator
- \* 90. Parker Classic Ball Pen, Stainless
- 91. Canon AE-1 Camera Body
- 92. Canon Standard 50 MM F1-8 Lens
- 93. Polaroid One Step 600 Land Camera
- \*+94. Coleman 10 Gallon Cooler, Polylyte, 34 Quart
- \*+95. Men's Sweatshirt
- \*+96. Men's Sweatpants
- \*+97. One-A-Day Vitamins Plus Iron

\* Indicates non-Comparables, Not in Market Basket

\*+ Indicates in some city-pair comparisons



Table B2  
Market Basket Comparison  
Killeen, Texas

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
1. Disposable (Crickett) Lighter	.55 <sup>1</sup>	.83 <sup>1</sup>
2. Eveready Flashlight & Batteries	2.05	2.97
3. NFL Football	8.95	9.97
4. Coleman 10 Gal. Cooler	22.50	22.97
5. Atra Shaving Cartridges, 10	3.19	2.35
6. Light Bulbs, pk. of 4	1.25	1.68
7. Kiwi Black Shoe Polish	.92	1.18
8. Time-Zero Supercolor SX-70 Land Film (10 pictures)	7.35	6.94
9. 20 Gallon Trash Container, Plastic, w/lid	7.97	7.95 <sup>2</sup>
10. Sunbeam Mixmaster	39.95	36.83
11. Rival Crockpot, 3½ quart	12.75	12.57 <sup>3</sup>
12. Cheesecloth, white	1.05	1.57
13. Oil Drain Pan	1.25	2.47
14. Tire Pressure Gauge	2.60	2.37 <sup>4</sup>
15. One-Gallon Gas Can	2.65	1.76
16. Motor Oil, quart, Quaker State	1.20	1.04
17. Electrical Tape	.70	.77
18. Black/Decker Drill	12.95	11.44
19. Black/Decker Dustbuster	27.95	22.88
20. Tooth Polish, Pearl Drugs, Spearmint	2.05	2.63

Table B2 continued

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
21. Toothbrush, Soft-Edge	1.45	1.27 <sup>5</sup>
22. Silkience Shampoo, 15 oz. Regular	2.39	2.17
23. Silkience Conditioner, 15 oz. Regular	2.49	2.17
24. Gillette Dry Look Hair Spray	1.89	2.28 <sup>6</sup>
25. Toni Silkwaves Home Permanent, Regular	3.39	3.44
26. Comb	.54	.52
27. Ladies Brush	1.35	1.97 <sup>7</sup>
28. Ladies Connair Pro-Style Hair Dryer	17.95	24.97
29. Gillette Foamy Shaving Cream, 11 oz., Regular	1.49	1.28
30. Trac II Razor	3.30	3.23
31. Ladies Razor, Just Whistle	1.15	1.28
32. Ladies Cord Shaver, Lady Remington	18.95	21.97
33. Skin Bracer After Shave Lotion, 4 oz.	1.70	1.66
34. Men's Crewneck T-Shirts, Hanes	8.25 <sup>8</sup>	6.64 <sup>9</sup>
35. Men's Cotton Briefs, Hanes	6.75 <sup>10</sup>	5.14 <sup>11</sup>
36. Men's Socks, Burlington	1.60	1.67 <sup>12</sup>
37. Men's Sweatshirt	6.00	6.97
38. Men's Sweatpants	6.00	6.97
39. Halogen Headlamp	8.75	7.88
40. Spark Plugs, Pack of 4	4.00	3.96 <sup>13</sup>
41. Ace Air Filter	2.75	2.47 <sup>14</sup>

Table B2 continued

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
42. Trico Wiper Blade	2.75	2.27
43. GE Brew Starter	34.45	34.97
44. Hefty Trash Bags, 20	2.39	2.58
45. Country Broom, Washable	4.50	4.31 <sup>15</sup>
46. Purex Bleach	.93	.69 <sup>16</sup>
47. Ironing Table	13.25	9.97 <sup>17</sup>
48. Atari 2600 Cassette "Raiders of the Lost Ark"	26.50	32.88
49. GE Clock Radio, Digital	20.50	28.97
50. Album, Alabama, "The Closer You Get..."	6.50	7.65
51. Bufferin, 60 Tablets	2.95	2.94
52. Vaseline Intensive Care Lotion, 10 fl. oz.	1.79	1.58
53. Fitted Sheet, Queen Size	10.25	9.97 <sup>18</sup>
54. Ladies Chic Jeans	24.00	21.97 <sup>19</sup>
55. Layette Gown, Carters	3.00	3.17 <sup>20</sup>
56. Sheer Energy Pantyhose	2.75	2.37
57. TI Business Analyst II Calculator	32.95	39.97
58. Canon AE-1, Lens & Body	232.90	259.87
59. Polaroid One-Step 600	26.95	22.88
60. Turtlewax Liquid Car Wax, 14 oz.	3.25	3.57
61. Locking Gas Cap, Stuart	5.25	6.97
62. TI Home Computer, Ti 944A	144.50	159.00
63. Alka Seltzer Plus Cold Medicine, 36 Tablets	2.90	2.24
64. Men's Levi Jeans	15.00	17.97
65. Dolly Toy Wonderful World of Disney Musical Mobile	10.75	13.97

Table B2 continued

Footnotes for Table 13 Market Basket Comparison - Killeen, Texas:

1. Bic, both stores
2. Rubbermaid
3. Crocker, Kettle
4. K-Mart brand
5. Oral brand
6. Dry Look Extra Hold
7. Goody brand
8. Jockey
9. Sale price. Regular Price. \$7.47
10. Jockey
11. Sale price. Regular price \$6.45
12. Hanes
13. Sale price. Regular price \$4.48
14. K-care brand
15. K-Mart brand
16. Sale price. Regular price \$1.39
17. Sale price. Regular price \$13.97
18. Tastemaker brand. Sale price. Regular price \$11.88
19. Sale price. Regular price \$22.99
20. Spencers

Table B3

Market Basket Comparison

Leesville, Louisiana

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>Walmart</u>
1. Disposable (Cricket) Lighter	.56	.54
2. Everyday Flashlight & Batteries	3.05	5.09
3. NFL Football	8.95	9.84
4. Atra Shaving Cartridges, 10	1.79 <sup>1</sup>	2.73
5. Light bulbs, pack of 4	1.25	1.92 <sup>2</sup>
6. Kim Black Shoe Polish	.62	.78
7. Time-Zero Supercolor SX-70 Land Film (10 Pictures)	7.35	7.47
8. 20 gallon trash container, plastic with lid	7.95	10.88
9. Sunbeam Mixmaster	39.95	36.84
10. Rival Crockpot, 3½ quart	12.75	11.67
11. Oil Drain Pan	1.29	1.86
12. Tire Pressure Gauge	2.80	2.27
13. One-Gallon Gas Can	2.65	1.86
14. Motor Oil, quart	1.20	.86 <sup>3</sup>
15. Black/Decker Drill	12.95	13.47
16. Black/Decker Dustbuster	27.95	27.94
17. Tooth Polish, Pearl Drops, Spearmint	2.05	2.22
18. Toothbrush, Soft-Edge	1.35	1.43
19. Silkience Shampoo, 15 oz., Reg.	2.39	2.74
20. Silkience Conditioner, 15 oz., Reg.	2.49	2.74
21. Gillette Dry Look Hair Spray	1.89	2.23
22. Toni Silkwaves Home Perm, Reg.	3.39	3.38

Table B3 continued

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>Walmart</u>
23. Combs, pack of 2	.65	.52
24. Ladies Brush, Goody	2.75	2.63
25. Norelco Razor, Electric	32.95	28.93
26. Gillette Foamy Shaving Cream, 11 oz., Reg.	1.49	1.42
27. Trac II Razor	3.30	3.68
28. Ladies Razor, Just Whistle	1.15	1.87
29. Ladies Cord Shaver, Lady Remington	18.95	18.67
30. Skin Bracer After Shave Lotion, 4 oz.	1.70	1.78
31. Men's Crewneck T-Shirts, Hanes	8.25 <sup>4</sup>	6.64
32. Men's Cotton Briefs, Hanes	6.75 <sup>5</sup>	6.64
33. Men's Socks, Burlington	1.60	1.66
34. Men's Sweatshirt	6.00	7.24
35. Halogen Headlamp	8.75	7.94
36. Ace Oil Filter	2.25	2.73
37. Spark Plugs, pack of 4	4.00	4.36
38. Ace Air Filter	2.75	2.67 <sup>6</sup>
39. Trico Wiper Blade	2.75	1.96
40. GE Brew Starter	34.95	35.84
41. Country Broom, Washable	4.50	3.68 <sup>7</sup>
42. Purex Bleach	.93	.96 <sup>8</sup>
43. Ironing Table	15.00 <sup>9</sup>	15.94 <sup>9</sup>
44. Atari 2600 Cassette "Raiders of the Lost Ark"	26.50	32.93 <sup>10</sup>
45. GE Clock Radio, Digital	21.50	23.76

Table B3 continued

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>Walmart</u>
46. Album, Alabama, "The Closer You Get..."	6.50	6.96
47. One-A-Day Vitamins Plus Minerals	5.00	5.82
48. Vaseline Intensive Care Lotion, 10 fl. oz.	1.79	1.72
49. Fitted Sheet, Queen Size	10.25	9.66 <sup>11</sup>
50. Sheer Energy Pantyhose	2.75	3.24
51. Timex Ladies Sportster Watch	23.98	19.96
52. Canon AE-1, lens & body	232.90	247.84
53. Polaroid One-Step 600	19.95	22.76
54. Turtlewax Hardshell Paste Wax, 14 oz.	3.65	3.34
55. Scope Mouthwash, 11 oz.	1.79	1.88
56. Jean Nate Cologne, 8 oz.	3.60	3.97
57. Armorall, 8 oz.	2.65	2.53
58. Dolly Toy Wonderful World of Disney Musical Mobile	10.60	9.74
59. Pampers, Box of 48	<u>8.10</u>	<u>8.28</u>
	689.52	712.91

Footnotes for Table B3 Market Basket Comparison - Leesville, Louisiana

1. Personna brand.
2. GE.
3. Sale price. Regular price \$1.08.
4. Jockey.
5. Jockey.
6. Walmart brand.
7. Libman brand.
8. Clorox.
9. PX: Majesty brand. Walmart: Eveready brand.
10. Pac Man.
11. Tastemaker.



Table B4

Market Basket Comparison

Lakewood, Washington

<u>Items</u>	<u>PX</u>	<u>Prices</u>	<u>K-Mart</u>
1. Disposable (Crickett) Lighter	.56		.61
2. Eveready Flashlight & Batteries	2.65 <sup>1</sup>		4.08
3. Coleman 10 Gallon Cooler	22.50		22.97
4. Atra Shaving Cartridges, 10	3.19		3.97
5. Light Bulbs, pack of 4	1.25		3.17 <sup>2</sup>
6. Kiwi Black Shoe Polish	.62		.77
7. Time-Zero Supercolor SX-70 Land Film (10 Pictures)	7.35		7.69
8. 20 Gallon Trash Container, plastic w/lid	7.95		10.97
9. Sunbeam Mixmaster	69.95 <sup>3</sup>		44.97 <sup>3</sup>
10. Rival Crockpot, 3½ quart	12.75		13.97 <sup>4</sup>
11. Oil Drain Pan	1.25		2.37
12. One-Gallon Gas Can	2.65		2.88
13. Motor Oil, quart, Pennzoil	1.20		1.19
14. Electrical Tape	.70		.88
15. Black/Decker Drill	13.50		14.97
16. Black/Decker Dustbuster	27.95		29.97
17. Tooth Polish, Pearl Drugs, Spearmint	2.05		2.23
18. Toothbrush, Soft-Edge	1.15		1.40
19. Silkience Shampoo, 15 oz. Reg.	2.39		2.78
20. Silkience Conditioner, 15. oz. Reg.	2.49		2.78
21. Toni Silkwaves Home Permanent, Regular	3.39		3.50

Table B4 continued

	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
22. Comb	.83	1.08
23. Ladies Brush	1.35 <sup>5</sup>	1.78 <sup>5</sup>
24. Ladies Connair Pro-Style Hair Dryer	17.95	24.97
25. Norelco Razor, Electric	32.95	34.97
26. Gillette Foamy Shaving Cream, 11 oz. Reg.	1.49	1.97
27. Trac II Razor	3.30	3.92
28. Cheesecloth, White	1.05	1.57
29. Gillette Dry Look Hair Spray	1.89	2.28
30. Ladies Razor, Just Whistle	1.70 <sup>6</sup>	1.86 <sup>6</sup>
31. Ladies Cord Shaver, Lady Remington	18.95	19.97
32. Skin Bracer After Shave Lotion, 4 oz.	1.70	1.82
33. Men's Crewneck T-Shirts, Hanes	5.75	7.47
34. Men's Cotton Briefs, Hanes	4.95	6.47
35. Men's Socks, Burlington	1.60	1.67
36. Men's Sweatshirt	6.00	6.97
37. Men's Sweatpants	6.00	8.97
38. Halogen Headlamp	8.75	9.88
39. Spark Plugs, Pack of 4	4.00	4.12
40. Ace Air Filter	2.75	2.96
41. Trico Wiper Blade	2.75	3.57
42. GE Brew Starter	34.95	37.97
43. Hefty Trash Bags, 20	2.39	2.58
44. Country Broom, Washable	4.50	4.70

Table B4 continued

		<u>Prices</u>
	<u>PX</u>	<u>K-Mart</u>
45. Purex Bleach	.93	.77
46. Ironing Table	11.50	13.00 <sup>7</sup>
47. Scotch Tape, 800	.71	1.28
48. Atari 2600 Cassette "Raiders of the Lost Ark"	26.50	32.88
49. GE Clock Radio, Digital	20.50	28.97
50. Album, Alabama, "The Closer You Get..."	6.50	6.97
51. One-A-Day Vitamins Plus Iron	4.50	4.51
52. Bufferin, 60 Tablets	2.95	3.24
53. Vaseline Intensive Care Lotion, 10 Fl. Oz.	1.79	1.74
54. Fitted Sheet, Queen Size	10.25	12.37 <sup>8</sup>
55. Ladies Chic Jeans	22.00	23.95 <sup>9</sup>
56. Sheer Energy Pantyhose	3.00	3.24
57. Pampers, Box of 12	2.20	2.47
58. Timex Ladies Sportster Watch	23.95	26.97
59. TI Business Analyst II Calculator	32.95	39.97
60. Canon AE-1, Lens & Body	232.90	299.88
61. Polaroid One-Step 600	19.95	21.97
62. Scope Mouthwash, 18 oz.	1.79	2.07
63. Contact Cold Medicine, 10 Tablets	1.59	2.28
64. Maxi Taxi Infant Seat (Stroller)	29.50	39.97
65. Kingsford Charcoal Briquettes, 10 lbs.	2.99	3.27
66. TI Home Computer, Ti 944A	144.50	159.00
67. Turtlewax Hardshell Paste Wax, 14 oz.	3.65	3.57
68. Armorall Protectant, 8 oz.	2.65	5.27

Footnotes for Table B4 Market Basket Comparison - Lakewood, Washington:

1. BMG Flashlight
2. GE
3. PX: Glass Bowl. K-Mart: Steel Bowl
4. K-Mart brand
5. PX: Tip Top brand. PX: Goody brand
6. Flicker, both stores
7. K-Mart brand
8. Tastemaker
9. Sassoon

Table B5  
Market Basket Comparison  
Leominster, Massachusetts

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
1. Disposable (Cricket) Lighter	.56	.69
2. Eveready Flashlight & Batteries	3.94	4.88
3. Coleman 10 gallon Cooler	22.50	22.97
4. Atra Shaving Cartridge, pack of 10	3.19	3.47
5. Light bulbs, pack of 4	1.25	1.98 <sup>1</sup>
6. Kim Black Shoe Polish	.62	.67
7. Time-Zero Supercolor SX-70 Land Film (10 Pictures)	7.35	7.38
8. 20 gallon trash container, plastic with lid	4.25	7.97
9. Sunbeam Mixmaster	69.95 <sup>2</sup>	77.47 <sup>2</sup>
10. Rival Crockpot, 3½ quart	12.75	14.97 <sup>3</sup>
11. Cheesecloth, white	1.05	1.57
12. Oil Drain Pan	1.25	2.37
13. Tire Pressure Gauge	2.25	1.17
14. Motor Oil, quart	1.20 <sup>4</sup>	1.17 <sup>4</sup>
15. Electrical Tape	.70	.77
16. Black/Decker Drill	12.95	14.97
17. Black/Decker Dustbuster	27.95	29.87
18. Tooth Polish, Pearl Drops, Spearmint	1.85	2.17
19. Toothbrush, Soft-Edge	1.15	1.22
20. Silkience Shampoo, 15 oz., Reg.	2.39	2.78
21. Silkience Conditioner, 15 oz., Reg.	2.49	2.47
22. Toni Silkwaves Home Perm, Reg.	3.39	3.88

Table B5 continued

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
23. NFL Football	11.95	16.97
24. Comb	.35	.48
25. Ladies Brush	1.60	1.46 <sup>5</sup>
26. Ladies Connair Pro-Style Hair Dryer	17.95	19.97
27. Norelco Razor, Electric Remington	18.95	19.97
28. Gillette Foamy Shaving Cream, 11 oz., Reg.	1.49	1.37
29. Trac II Razor	3.30 <sup>6</sup>	3.57
30. Ladies Razor, Just Whistle	1.15	1.28
31. Ladies Cord Shaver, Lady Remington	18.95	34.97
32. Skin Bracer After Shave Lotion, 4 oz.	1.70	1.77
33. Men's Crewneck T-Shirts, Hanes	5.75	7.47
34. Men's Cotton Briefs, Hanes	4.95	5.99 <sup>7</sup>
35. Men's Socks	1.60	2.84 <sup>8</sup>
36. Men's Sweatshirt	6.00	11.97
37. Men's Sweatpants	6.00	7.97
38. Halogen Headlamp	8.95	9.88
39. Ace Oil Filter	2.25	3.97
40. Spark Plugs, pack of 4	4.00	5.12
41. Ace Air Filter	2.75	2.96
42. Trico Wiper Blade	2.75	3.57
43. GE Brew Starter	34.95	32.47
44. Hefty Trash Bags, 20	1.29	2.58
45. Country Broom, Washable	3.90 <sup>9</sup>	3.97 <sup>9</sup>
46. Purex Bleach	.93	.77
47. Ironing Table	13.25 <sup>10</sup>	13.97 <sup>10</sup>

Table B5 continued

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
48. Scotch Tape, 800	.78	1.16
49. Atari 2600 Cassette "Raiders of the Lost Ark"	26.50	29.97
50. GE Clock Radio, Digital	23.50	24.47
51. Album, Alabama, "The Closer You Get..."	6.50	7.26
52. One-A-Day Vitamins Plus Iron	4.50	5.34
53. Bufferin, 60 Tablets	2.70	2.87
54. Vaseline Intensive Care Lotion, 10 Fl. oz.	.99 <sup>11</sup>	1.95
55. Fitted Sheet, Queen Size	10.25	12.97 <sup>12</sup>
56. Ladies Chic Jeans	22.00	19.99 <sup>13</sup>
57. Layette Gown, Carters	3.20	4.97 <sup>14</sup>
58. Sheer Energy Pantyhose	3.00	3.21
59. Pampers, Box of 16	2.20	2.90 <sup>15</sup>
60. Timex Ladies Sportster Watch	23.95	26.97
61. TI Business Analyst II Calculator	32.95	39.97
62. Canon AE-1 lens & body	234.90	239.88
63. Polaroid One-Step 600	19.95	27.88
64. Alka Seltzer & Cold Medicine, 36 Tabs	2.90	3.83
65. TI Home Computer, Ti 994A	149.95	148.00
66. Turtlewax Hardshell Paste Wax	5.25	5.97
67. Black & Decker Drill Bit Set, 10 piece	7.25	8.92
68. Amorall Protectant, 8 oz.	<u>2.65</u>	<u>2.67</u>
	947.56	1045.32

Footnotes for Table B5 Market Basket Comparison - Leominster, Massachusetts

1. GE
2. Glass bowl, both stores
3. K-Mart Brand
4. PX: Quaker State brand. K-Mart: K-Mart brand
5. Solo brand
6. Atra
7. Sale price. Regular price \$6.47
8. K-Mart brand
9. PX: Skilcraft brand. K-Mart: K-Mart.
10. PX: Dutchess brand. K-Mart: K-Mart brand.
11. AAFES brand.
12. Tastemaker.
13. Sassoon.
14. Smurf.
15. Luvs.



Table B6

Market Basket Comparison  
Springfield, Virginia

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
1. Disposable (Crickett) Lighter	.55 <sup>1</sup>	.83
2. Eveready Flashlight & Batteries	1.59 <sup>2</sup>	3.20
3. NFL Football	11.95	15.97
4. Atra Shaving Cartridge, Pack of 10	3.19	3.97
5. Light bulbs, pack of 4	1.25	1.87
6. Kim Black Shoe Polish	.62	.77
7. Time-Zero Supercolor SX-70 Land Film (10 Pictures)	7.35	7.99
8. 20 Gallon trash container. plastic with lid	7.95	7.97
9. Sunbeam Mixmaster	69.95 <sup>3</sup>	49.94 <sup>3</sup>
10. Rival Crockpot, 3½ quart	11.50	13.97
11. Cheesecloth, white	1.05	1.57
12. Oil Drain Pan	1.00 <sup>4</sup>	2.26
13. Tire Pressure Gauge	2.25	2.97
14. One-Gallon Gas Can	2.65	2.79
15. Motor Oil, quart	1.10	1.15
16. Electrical Tape	.70	1.27
*17. Black/Decker Drill	15.95	16.97
18. Black/Decker Dustbuster	27.95	23.97
19. Tooth Polish, Pearl Drugs, Spearmint	1.85	2.63
20. Toothbrush, Soft-Edge	1.15	1.14 <sup>6</sup>
21. Silkience Shampoo, 15 oz, Reg.	2.39	2.26
22. Silkience Conditioner, Reg., 15 oz	2.49	2.18

Table B6 continued

<u>Items</u>	<u>Prices</u>	
	<u>PX</u>	<u>K-Mart</u>
23. Toni Silkwaves Home Permanent, Regular	3.39	3.88
24. Comb	.83	.97
25. Ladies Brush, Pro	.87	1.34
26. Ladies Connair Pro-Style Hair Dryer	17.95	24.97
27. Norelco Razor, Electric Remington	32.95	34.97
28. Gillette Foamy Shaving Cream, 11 oz., Reg.	1.49	1.97
29. Trac II Razor	3.30	3.61
30. Ladies Razor, Just Whistle	1.15	1.28
31. Ladies Cord Shaver, Lady Remington	18.95	21.97
32. Men's Crewneck T-Shirts, Hanes	5.75	7.97
33. Men's Cotton Briefs, Hanes	4.95	6.47
34. Men's Socks, Burlington	1.80	1.47 <sup>7</sup>
35. Men's Sweatshirt	6.00	8.97
36. Men's Sweatpants	6.00	8.97
37. Halogen Headlamp	8.75	7.97
38. Ace Oil Filter	2.25	3.97
39. Spark Plugs, Pack of 4	4.00	4.12
40. Ace Air Filter	2.75	2.96
41. Trico Wiper Blade	2.75	3.57
42. GE Brew Starter	34.95	34.88
43. Hefty Trash Bags, 20	2.39	2.88
44. Country Broom, Washable	5.00	5.08
45. Purex Bleach	.93	.88 <sup>8</sup>

Table B6 continued

<u>Items</u>	<u>PX</u>	<u>Prices</u>	<u>K-Mart</u>
46. Ironing Table	13.25 <sup>9</sup>		14.97
47. Scotch Tape, 800	.78		1.38
48. Atari 2600 Cassette "Raiders of the Lost Ark"	26.50		28.00
49. GE Clock Radio, Digital	20.50		27.88
50. Album, Alabama, "The Closer Your Get..."	6.50		7.97
51. One-A-Day Vitamins Plus Iron	4.50		3.97
52. Bufferin, 60 Tablets	2.95		2.94
53. Vaseline Intensive Care Lotion, 10 fl. oz.	1.79		1.56
54. Fitted Sheet, Queen Size	10.25		11.57
55. Ladies Chic Jeans	22.00		22.99
56. Layette Gown, Carters	3.00		4.97 <sup>11</sup>
57. Sheer Energy Pantyhose	3.00		3.68 <sup>12</sup>
58. Pampers, Box of 12	2.20		2.47
59. Timex Ladies Sportster Watch	23.95		29.95
60. TI Business Analyst II Calculator	32.95		39.97
*61. Canon AE-1 lens & body	277.90 <sup>13</sup>		264.87 <sup>13</sup>
62. Polaroid One-Step 600	19.95		22.88
63. Scope, 18 oz.	1.79		2.42
64. Dristan, 24 Tabs.	2.25		2.84
65. TI Home Computer, TI994A	144.50		149.00
66. Black/Decker Drill Bit Set, 13 piece	8.25		12.90
67. Armorall Protectant, 16 oz.	5.10		5.27
	979.44		1027.21

Table B6 continued

1. B.2
2. No name brand.
3. PX: Glass bowl. K-Mart: Steel bowl.
4. Sale Price.
5. Sale Price. Regular price \$29.87
6. Reach brand.
7. Hanes.
8. Sale price. Regular price \$1.09.
9. Dutchess brand.
10. Pac Man
11. Shortcake brand
12. Slenderalls.
13. Both stores: lens is Fl.4.

REFERENCES

- Allan, R.C. and W.E. Diewert, "Direct versus Implicit Superlative Index Number Formulae." Review of Economics and Statistics, August 1981. 63(3), pp. 430-35.
- Ash, Colin, Bernard Udis and Robert F. McNown, "Enlistments in the All-Volunteer Force: A Military Personnel Supply Model and Its Forecasts." American Economic Review, 73 (March 1981). 145-55.
- Bowman, William, and George Thomas, "Forecasting Reenlistment Rates with Pecuniary Econometric Models: Lessons for Future Research." American Economic Review, Papers and Proceedings, (May 1983).
- Cogan, Phillip and Geoffrey H. Moore. "Some Proposals to Improve the Consumer Price Index." Monthly Labor Review, 104(4), September 1981, 20-25.
- Dawkins, William Lee. "A Note on Regional Inflation Rate Determinants." Atlantic Economic Journal, 10(2), July 1982, 64.
- DeRosa, D.A. and M. Goldstein, "The Cross-Sectional Price Equation: Comment." American Economic Review, September 1982, 72(4), pp. 876-83.
- Gavett, Thomas W. "Quality and a Pure Price Index." Monthly Labor Review, March 1967, pp. 16-20.
- Green, Gloria P. "Relative Importance of CPI Items." Monthly Labor Review, November 1965, pp. 1246-1349.
- Hageman, Robert. "The Variability of Inflation Rates Across Household Types." Journal of Money, Credit and Banking, 14(14), 494-510.
- Michael, Robert T. "Variation Across Households in the Rate of Inflation," Journal of Money, Credit and Banking, Vol. 11, February 1979, pp. 32-46.
- Ruggles, Richard, "Measuring the Cost of Quality." Challenge, November 1961.
- The President's Private Sector Survey on Cost Control, Task Force Report on the Office of the Secretary of Defense, Draft Report, June 30, 1983.
- U.S. Department of Labor. Consumer Expenditure Survey: Diary Survey, 1980-81. Division of Living Conditions Studies, Office of Prices and Living Conditions, Bureau of Labor Statistics, U.S. Department of Labor, May, 1983.
- Wahl, Richard W. "Is the Consumer Price Index a Fair Measure of Inflation?" Journal of Policy Analysis and Management, 1 (4), 1982, pp. 496-511.
- Wallace, William H. Measuring Price Changes: A Study of the Price Indexes. Federal Reserve Bank of Richmond, December 1970.

REFERENCES Continued

Wilder, Ronald P., C. Glyn Williams and David Singh. "The Prize Equation:  
A Cross-Sectional Approach." American Economic Review, 67(4),  
September 1977, 732-40.